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Callender, Geo. M. & Co. Ltd.
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Francis, S. W. & Co. Ltd.
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Kinnell & Co., Ltd., Chas. P.

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Smeed, Dean & Co. Ltd.
Wouldham Cement Co. Ltd.

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Sessions & Sons, Ltd.
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Christiani & Nielsen
Expanded Metal Co. Ltd.
King, J. A. & Co.
Somerville, D. G. & Co.; Ltd.

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Somerville, D. G. & Co., Ltd.

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Nicholls & Clarke, Ltd.
Potterton, T.
Summerscales, W. & Sons
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Ragusa Asphalte Co. Ltd.
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Seyssel and Metallic Lava Asphalte Co.
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THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXIV.—No. 3920. MARCH 22, 1918.

BUILDING MANAGEMENT.

IF the duties of a clerk of works are exacting, those of a builder's foreman are still more so, for it is essential to his tenure of the position that he shall succeed not only in carrying out the work without mistakes or disasters, but also in making it pay. As to the first requirement, Mr. Oultram's excellent work on the builder's foreman,* which seems to contain a life's experience, sums up many of the difficulties with which he has to contend, especially with foundations, plant management, steel frame or reinforced concrete buildings. After reading it one cannot fail to be impressed by the extent of knowledge and judgment required from those who hold those positions. To make a profit is a problem which can be solved in various ways. The foreman can, on the one hand, watchfully and cautiously endeavour to evade the contract or, on the other hand, he can try to save in other directions and concentrate his energies on securing the best men, and by system and foresight effect great economy in working and also by his tact and firmness get the most work out of his men. The best builders want nothing more. Like master, like man. It is only hucksters who want tricksters, and a wise foreman will only engage himself to those who have a name to keep and who take a pride in their work.

With increasing competition and greater labour difficulties the life of the foreman becomes yearly more harassing, and he often finds himself a victim either to bad estimating or overwhelming obstacles, either of which makes profits impossible, and for this he invariably suffers. As an instance of the labour troubles, quite recently the bricklayers on a large contract decided that in laying 400 bricks a day, which was the pace adopted, they were too active, and began to lay but 300 a day. The foreman discharged two men for inefficiency, whereupon the whole body demanded their reinstatement. As none others could be got, and as there were already an insufficient number employed, the request was allowed and promptly followed by a demand for more wages, also conceded. Contractors cannot estimate under these conditions, nor can their foremen do them justice. The deplorable thing is that not one of the men should have the courage to tell the others what he thought of their malingering. A few of the miners recently did speak out, at the risk of losing their positions, and they showed the men their poverty of spirit, and to the great surprise of the leaders the men cheered them for their courageous candour. In France these men would be put in the trenches, but here it is too late for that, and the only hope is in the proposed Industrial Councils. The architectural profession owes much—more perhaps than is generally admitted—to the sagacity and resourcefulness of the general foreman. This is especially true where young architects are concerned, or older ones who give their minds entirely to the artistic side of their work. Consider the foreman's position. His employer has to scrutinise the whole fabric for himself, and is alone responsible should it fail anywhere. Not only that, but just as a tailor who has agreed to make a coat cannot charge extra for the buttons, neither can he, having agreed to erect a building complete, charge extra for any essentials or indispensables which may have been omitted by the architect. There is only one saving clause—he can give notice that unless the specification be amended in certain particulars, he will not accept responsibility. If after that he is still requested to proceed, the responsibility shifts from his shoulders to those of the architect.

The detection of these flaws and imperfections usually devolves upon the foreman. It is sometimes a heavy responsibility, and although the best architects will usually see them through, they have to be prepared for the others who will not. But that is not all. There are other risks to face, such as weather, delays in delivery of steel, timber, &c., adverse markets, incorrect quantities, accidents, burglaries, or collapses due to hidden neglect, &c., &c. Any one of these may have the effect of depriving the builder of all the results of his foreman's careful management, and we fear that sometimes for these reasons he is not appreciated at his true value. An intimate knowledge of his difficulties justly entitles him, in our opinion, to sympathetic treatment both from his employer and the architect. Contractor's profits appear to outsiders to be large, but one of the greatest of modern contractors—Mr. Thomas Brassey—who carried out contracts amounting to 75 million pounds, only succeeded in making an average profit throughout of 1½ per cent., and to-day even this figure might have to be reduced!

We cannot leave this subject without reference to the question of variations on the contract. Broadly speaking, there are two types of architects: there are those who conceive their buildings completely and delineate them from the outset in full detail, and carry them out with little or no departure from the original intention, some even going so far as to refrain from adopting an obvious improvement because of their desire to adhere to the contract. The late Thomas Crossland and the late Phillip Webb were men of this type. The other type of architect will conceive the broad lines of his buildings and after getting into touch with the contractor will constantly revise and remodel his details with never ceasing care for the final effect. There is probably an increasing number of practitioners who adopt this method, and no doubt they contend that it is the only way to attain perfection. Be that as it may, there is no doubt that it is a serious handicap to the builder, and one which frequently converts what should have been a profitable contract into a losing one. The short time usually allowed for the initiation of a contract is no doubt the cause of much variation, but for our own part we think that a recognition of this factor by architects would induce them to prepare their details in the first instance with more thorough consideration and foresight.

There is no doubt that the maintenance of the willing co-operation of the foreman and his sub-foreman is a very important factor in the execution of any work, and still more for work so full of complicated detail as architectural work. Once it is lost, as it usually is by a series of pinpricks due to insufficient instruction, want of appreciation of any special difficulty, or a method of scolding or insistence upon unnecessary alterations, it can never be revived. There is no class of men more willing to make sacrifices and to make special efforts than building artisans, provided they can feel all the time that they are working for a man who really understands and knows their difficulties. We know cases of real devotion to such men, and it is worth a good deal of trouble and pains on the part of architects to make this felt. Where it is found the contract ceases to be a piece of ordinary task work, and you find the workers conspiring as it were to please the master worker, and to produce with him something fine; and even now, among the men, one meets many who still talk with a glistening eye of the work they did, perhaps years ago, under a man who possessed this secret and set them all on fire to serve him well. It is the old guild spirit awakened, but it will not show itself unless properly kindled. J. F. Millet once said: "Before a man can move others he must be moved himself." Unless the architect is fired with enthusiasm the men will vegetate and play with their work; but if he puts them on their mettle they will respond and everyone concerned will take pleasure in his task.

* "The Builder's Foreman." By J. H. Oultram. London: B. T. Batsford, Ltd., 5s. net.

NOTES.

St. Olave's Church, Southwark.

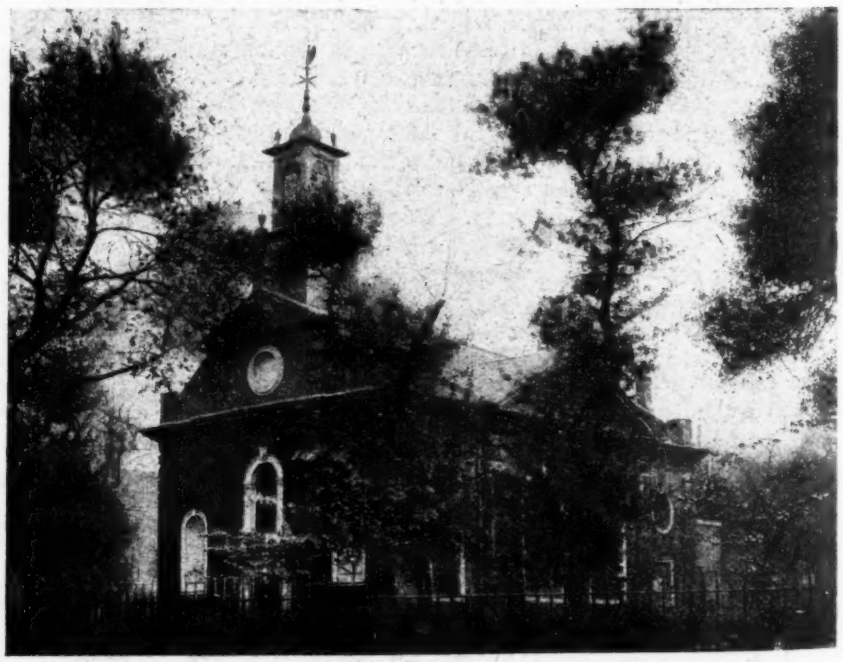
IT is now proposed to demolish the fine old church of St. Olave, Southwark, and to sell its site for commercial purposes, a Bill having been introduced into Parliament with this object. The County Council suggest that the church should be re-erected elsewhere, a project which might well, under existing circumstances, be difficult to perform. Between the church and the river is a quiet churchyard which might well be made a place of rest. When one considers the desolation of hideousness which reigns in the neighbourhood of London Bridge Station—a wilderness of commercial desolation which deforms a main approach to London—it may be well asked whether it is not possible to put the church to other uses and so preserve a building which has been connected for 900 years with the fortunes of London and its traditions. It is suggested that the church being situated within a stone's throw of a great terminus might be transformed into a museum, which would attract many who find they have a little time to spare in passing in and out of London. St. Olave's was renowned for the miracles wrought there in past times and was the bourne of many pilgrimages, while the richness of its endowments and its gold and silver plate and vestments were famous in the past. The present church is one of those rebuilt after the Fire, and possesses a fine interior and a pleasing front to Tooley-street. We believe a great mistake is made by the piecemeal attacks on old London churches which do not attract sufficient attention from the public, who suddenly wake up to find an old landmark has gone. It would surely be better to appoint a Commission finally to consider the fate of the partially disused churches of London. Doubtless it would be found that good reasons existed for demolishing some of them, but a broad view of the subject would convince the public that the great majority of them can and ought to be preserved, whatever their site values are, in the interests of the nation and to preserve one of the greatest charms of the richest city in the world.

The Swedish Lutheran Church, St. George's-in-the-East.

THE London Society, whose activities have already done more than anything else to concentrate the interest of the public on questions affecting London, have taken energetic steps to secure the retention of the Swedish Lutheran Church, situated in Prince's-square, near St. George's-in-the-East. The church was built by the Swedish Lutherans in 1728, and was used by them until quite recently, when a larger church was erected in the West End and Swedenborg's body lay buried in the crypt for more than a century before it was removed to Sweden. The freehold of the site is now offered for sale and although the Stepney Borough Council has considered the question of purchasing it, it does not feel itself in a position to do so. The site and building were estimated in 1908 to be worth £7,000, and the London Society have obtained an option of purchase for the sum of £3,750; but this option is only available for a few months, within which time it is hoped that a purchaser may be found, as the site would make an ideal playground in a poor district not too well provided with open spaces in a densely populated neighbourhood, and it should be found possible to utilise the church for some useful purpose. We give (by the courtesy of the London Society) illustrations of the building, which we hope may be secured from demolition. We might add that we regard support given to the London Society as the greatest aid that can be given by lovers of London and its associations, as there has never been a body which has so effectively proved its power of concentrating opinion and evoking interest in the welfare of London. Though young in years, it has set an example which we wish were followed by bodies we could name, which are rapidly becoming mere centres of useless discussion without the power, and possibly the will, to do anything for the community in which they exist—for they can hardly be said to live!

The Function of Advertising.

UNDER the title of "The Function and Place of Advertising in Modern Building Economics," the Council of the Association of British Advertising Agents have issued a booklet, in which they say: "The Council venture to think that this is the first time that the claims of advertising to a recognised place as an economic force have been so ably analysed, cleared of exaggeration, and cogently stated." This statement is amply substantiated, for the writer shows that, instead of being a somewhat hackneyed and vulgar method of appealing to publicity, advertising properly employed is a scientific means of decreasing cost of production by showing what can be standardised and what eliminated; while it is also a method by the use of which the cost of large and expensive staffs can be cut down. It must be remembered that advertising brings a commodity into public notice, but that, if it cannot then establish its reputation in the public esteem, it has become a quick and effective means of securing a final verdict which the manufacturer would only have ascertained by a longer, more expensive, and less certain means. The importance of advertising during the war to firms whose works have been taken over by the Government, and whose usual "line" may be forgotten by the public, is emphasised; and the unfairness which is evidenced by the unwillingness of the authorities to consider advertising as one of the legitimate costs of production and distribution is very well expressed. Instances are given, and might be indefinitely multiplied, of the way in which money spent in wise advertising actually decreases costs of production, by increasing demand; and it would not be too much to say that money judiciously spent in advertising has resulted in great actual economies, and has been one of the most beneficial factors of modern life. In America, where, more than anywhere else, advertising receives the attention given to a science, it has been found to be quite compatible with artistic results of a high standard.



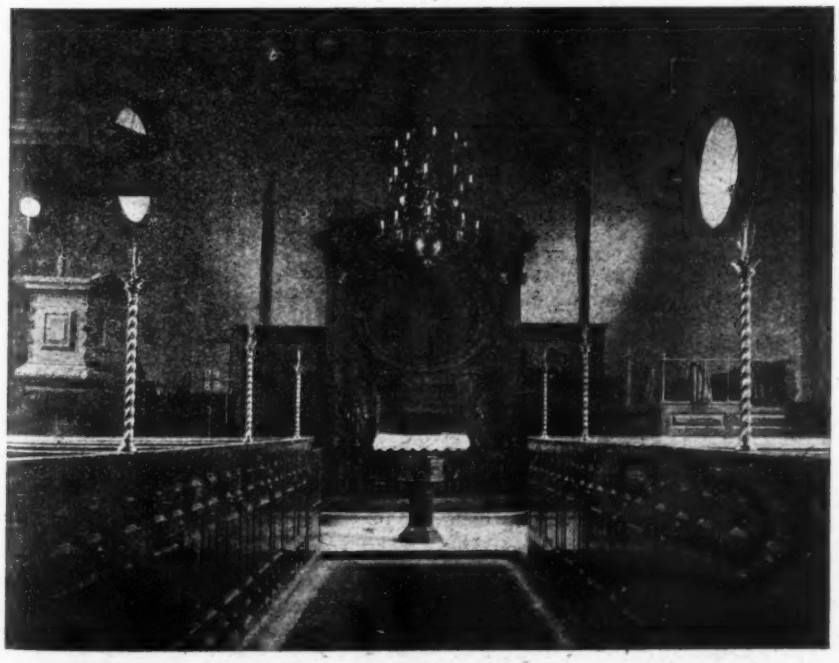
Swedish Lutheran Church, Prince's-square, St. George's-in-the-East Exterior, as formerly.

ON March 13, Mr. W. R. Davidge presided over an informal conference of the Royal Institute of British Architects, held at No. 9, Conduit-street, W., when Professor Adshead dealt with the subject of "National Housing and National Life."

Professor S. D. Adshead said he would preface his remarks with a few words as to the modern use of the term "housing." Used in its modern sense, housing did not mean house-building, and, although, in all probability, at least one-half of the time and energy of those who were members of the architectural profession was devoted to the building of houses, as any inspection of the Architectural Room at the Royal Academy would show, at the same time it was doubtful if one-hundredth part of their professional energy had been expended on housing. The term "housing," as used to-day, meant the providing of living accommodation for the working classes; and when they had it on reliable authority that over ninety per cent. of the plans of working class houses submitted to local authorities for their approval had not been prepared by architects, he thought he was justified in asserting that the interest of their profession in this class of work had been—to say the least—negligible. This was a very serious statement to have to make, and one that was surely deserving of their closest attention. The subject under discussion, "National Housing and National Life," suggested at the outset an entirely new aspect of the position. Let them, therefore, consider it from two points of view—the interest of the general public in housing and the responsibility of the architect in regard thereto. That there existed at the moment a popular interest in housing, amounting almost to an obsession on the part of the nation, no one would dispute, and it was an interest which had the support of every phase of social and political opinion. Indeed, so important had the question become that it was now recognized that the minimum accommodation and rent of a working man's house were bound to become factors of first importance in national standard values, upon which would be built any new system of national finance. In effect, it meant that the minimum wage would be regulated more than by any other factor on the rent of the house; and the rent, be it economic or otherwise, must be such as would secure the minimum accommodation of a living room and three bedrooms. It was a well recognised fact in economics that rents were not subject to the same fluctuations as were the prices of consumable articles; nor were they subject to the same conditions of supply and demand. A rise in the price of building materials and in the cost of labour did not produce a corresponding rise in rent. It simply discouraged building, and people crowded more tightly into houses already built. Crowding at the present moment was abnormal, and the cost of building was extraordinarily high; and yet, if 500,000 new houses were built under the present conditions, or anything like them, and if economic rents were to be fixed accordingly, they would not be occupied, except in a very limited way. The working classes would continue to live in crowded houses that were let at a much lower rent than the new houses, and would prefer to spend their increased wages in another way. Hence the need for a national housing subsidy. It might be considered by some that, in order to enable the working man to pay an economic rent for the new houses that it was proposed to erect at exceptional cost, the case would be met more directly by raising wages correspondingly. This might be so ultimately, but at the outset it would mean that overcrowding would continue and the extra wage would continue to wear out the pocket of the owner of the older property. But this question of rent was not a matter of primary importance to architects, except as indicating that the new houses that were to be built would not entirely depend in the amount of their accommodation upon the ordinary laws of demand and supply. They would be regulated by the accepted national principle that a house with less accommodation than four rooms was not considered satisfactory where there was any likelihood of its being occupied by a family. To-day, there was a universally recognised appreciation of the influence of the house and its surroundings and associations on the lives of the people generally. The house must have an interest which the tenant could feel was his own. The standard repeat and the bylaw street had been condemned and were for ever doomed. This opened out to them the panorama of an entirely new world and afforded opportunities for the architect which his imagination never before offered. Housing schemes must be laid out on town planning lines, and they must be placed, as far as possible, without the confines of the city. They must be thought of, not as spaces covered with packing cases, but as a collection of homes associated with one another in sharing the benefits of public buildings and public amenities. They must have gardens, interesting outlooks both back and front, and all the considered requirements of a complete community. No doubt some schemes would be urban and built within the city, but they would be laid out on quite new and interesting lines. He thought that their slum areas would be gradually cleared and the inmates of the worst of them accommodated in well-controlled flats. They had got a type of town building to erect which should consist of a huge quadrangle of flats arranged around a square laid out with cobbles or gravel and decorated with flowers and where the communal kitchen, the common wash-house, central heating and central lighting and all the so much discussed advantages of communal and common sharing could be tried.

Having sketched out what was to be, he came to the second point—the qualifications of the architect to accept the responsibility of carrying out this comparatively new branch of his work. He mentioned the word qualifications in this connection because he wished to make it particularly clear that if architects were to undertake this class of work (though they as a profession might not realise it), they had a great deal to learn about town planning, about modern systems of housing, and a great deal to learn—both of a practical and common-sense nature—that was at the moment much better understood by the engineer and the surveyor. In his opinion, the surveyor and engineer had, since the passing of the Town Planning Act, studied the subject in all its bearings both much more seriously and much more generally than had the architect, and this not only in its immediate relation to the width and construction of streets, but also with the wider view which, as architects, they associated with architectural effect. He said this because he felt that their profession must bestir itself if it was to qualify itself to undertake the great work that undoubtedly lay ahead.

Let him make himself quite clear and say that the housing scheme of the future would depend for its success upon an entirely different set of interests from those that had obtained in the past. It would not be the interest that they had been wont to associate with the picturesque village of the past; those humble records of a rural history spread over long and restful periods of slow change in architectural style, in the different use of materials and in the weathering of brick and stone. The new schemes could not depend on any interests like those. They were built under conditions totally different from those which obtained to-day. Their builders were country carpenters, and the workmen real craftsmen; or when, in Georgian days, contracting became common, they worked under some inborn architectural influence—they were not entirely absorbed in pocketing discounts and juggling with advances, and were quite simple men. Nor, again, would the cottage of the future be built by the speculative gentleman purely as a commercial enterprise, as had practically all the workmen's houses erected since the middle of the last century. No; the housing scheme of the future would be laid out on town planning lines and the commercial aspect would not loom largest in the field; and whilst nowhere would there be standard streets it went without saying that the cottages themselves would be built to standardised plans. But both cottage and street would now, for the first time, be considered conjointly;



Swedish Lutheran Church, Prince's-square, St. George's-in-the-East: Interior, as formerly.

and in the grouping and composition that would follow, would be the architect's opportunity. The recent cottage competition had proved a valuable and instructive lesson to the architectural profession. A general inspection of the designs submitted showed very clearly that, as a profession, they had not yet realised that the cottage of the future could not be the cottage of the past—the former being necessarily a unit in a composition, the latter having an individual identity. He sincerely hoped that cottage building in the future would come to be the work of the architect. It was his own fault if it didn't, but he must not think of cottages separately. He thought the profession would do well to have an exhibition of housing schemes, and to offer through the Institute one or two prizes to students for ideal schemes. The profession must hold on to this housing while the nation was interested. It had made a good start under Mr. Hare (the President), in arranging for these national competitions, and it had arranged for a special, and what he believed to be an acceptable, set of charges in connection with such schemes, and he hoped it would continue to do more.

Mr. Geo. Hubbard said Professor Adshead talked about a scheme of 500,000 houses, but he did not say where the money must come from. Was there any scheme?

Professor Adshead said part of the cost would be met by loans and the rest provided by the Government.

Mr. Weir: In what form? Money lent?

Professor Adshead: Handed over in the way of subsidy.

Mr. Hubbard: Do you think that a business proposition?

Professor Adshead: Yes. A national proposition.

Mr. Hubbard said he took an entirely different view. Professor Adshead put it forward that it was a matter of national importance that there should be these houses for the working classes and no one would deny that. The only question arose as to the methods which were proposed for obtaining these cottages. If the Government were going to provide money, then they were going a long way towards stopping private enterprise. Private enterprise had invariably helped the country in times of trial, and if there was a time of trial in regard to working-class houses, it was a matter for private enterprise in the future. They all admitted there was an insufficiency of houses for the working classes, and that, to his mind was due partly to the fact that private enterprise had been interfered with by semi-philanthropic bodies such as the Peabody and the Sutton Trusts, and by the local authorities who had put up dwellings and had been contented with a very small percentage of interest. In doing that they were throttling private enterprise. To his mind the matter was governed by the law of supply and demand, and if there was a demand he maintained it was much better to leave it to private enterprise to give the supply.

Mr. H. R. Aldridge denied that private enterprise had met the demand in the past. He appealed to architects to get out of the atmosphere of prejudice and approach the matter in a scientific spirit. He had hoped to have seen Mr. Wills present. He could not help thinking that there was more thought and attention being given at the moment to academic theory than to the interests of the people. There was a great tendency to say: "This is socialism," whilst the fact might be overlooked that it might be Christianity. It might be necessary to answer the question, "Am I my brother's keeper?" with a round "Yes" and to look with horror on the neglect of the past. In the building industry the architects were the cultured men and should be the intellectual leaders; but they had been very dumb dogs in the past when the needs of the people with regard to housing had been brought forward. They were approaching a period which he felt might be a period of great renaissance for the architectural profession, and if the architect took this seriously and rose to the height of his opportunity, he might take a place such as he had never taken before. He must, however, pay the price. He must do something more than the architect of a generation ago did. He must have a living interest in the craftsmen. So far from architects coming out and taking a position of attack, they were really on the defensive, and the only way they could put themselves right in the national life was to put their houses in order and say they were determined to do this work in the highest spirit of architecture. Mr. Aldridge proceeded to deal with the suggestions that had been made that private enterprise should be subsidised, and asked if any one would believe that Parliament would listen to such a proposal. All the talk about the greater cost of work done by the local authorities was untrue, and he challenged anyone to give instances of municipal cottage schemes where there had been extravagance.

Mr. W. S. Purchon said they were only just beginning to realise that these men, women and children were the greatest national asset, and with the realisation came the belief that a thorough overhauling of the housing of the people was an urgent necessity in the highest interests of the nation. Dealing with the housing needs of Sheffield he said that in the next twenty years they ought to build 50,000 houses. Looking ahead for twenty years was not, he submitted, a wild dream of socialism, but was sound common sense. The main advantage of looking ahead was that it showed them the desirability of not only seeing that the new houses were well designed and well built, that new roads and open spaces were properly laid out, that ample provision was made for the sites of such necessary public buildings as churches, schools, libraries, baths, &c., but that it also obliged them to consider the present city in its relation to the future developments, whether the latter were in the nature of the usual extensions to the city or arranged as groups of garden villages more or less removed from it. The fact was that urban housing could not be considered wisely apart from a consideration of the making of efficient towns and cities. To him it seemed clear that the housing problem was at the root of most of their social troubles, and that bad housing conditions were a menace to the future development of their civilisation. There was still great need for the education of the public on this point, and he trusted that architects would help to put forward high ideals. The architect was still sadly misunderstood by the public. He had designed an absurdly small proportion of the present houses and he was condemned for the defects of those he had not designed. If the country realised more clearly the help which the architect could give in this pressing question, the architect might benefit incidentally, but the gain to the community would be enormous.

Mr. Ruthen (South Wales) pointed out that there was a shortage of from 40,000 to 70,000 houses in South Wales before the war, and if private enterprise could meet the demand, why had it not been done?

Professor Lethaby said all he had to suggest was that a resolution should be passed asking the Council of the Institute to consider its own policy.

Mr. R. S. Weir said he came to the Conference not as an architect, but as a member of a rural district council containing 18 parishes. The subject of rural housing appealed to him because he was afraid it was being overlooked owing to the larger problem of urban housing. The district was a beautiful one which had attracted well-to-do residents, who had provided houses for themselves, but not for their gardeners and coachmen and so on. These people were paid better wages than the workers on the land and the result was that they got the houses in the villages and there was a great shortage. He had been elected the chairman of the housing committee, and he and his colleagues on the committee had found a deplorable state of things in many of the cottages. Their surveyor had put about 900 houses on the list as being defective. If they only took the new houses to be provided as 500, that would cost £150,000, if the price of the houses was £300 each. How they were to be built he did not know, but he supposed it was a matter the local authority would have to take up.

Mr. Jemmett said the discussion had gone largely on who should provide the houses, but as architects it did not matter to them who paid for them so long as they were well built. It was for the Government to say who should build them. His feeling was that, as architects, they had not yet begun to think how to build the houses. They prided themselves on their domestic architecture, but the houses were simply copies of houses built in the sixteenth and seventeenth centuries. None of these beautiful houses expressed life as they knew it to-day. They had still to consider how to build the modern cottage, and not merely to put up a nice seventeenth century cottage with a few modifications in the way of drains. They did not want a thing which looked like a seventeenth century cottage. They did not want little window panes and all that sort of thing. They wanted houses to live in which expressed the modern idea of life. The modern idea was that they lived in the plot of land and not in the walls of the house. The plot of land was the dwelling, and as much thought was required in designing the land outside the house as in designing the house. People in the future would sleep out of doors, and to build a modern house which, for instance, would not allow a man to sleep under a verandah was ridiculous.

Mr. A. Crouch endorsed what was said by Mr. Weir as to the need for more houses in the rural districts. He considered, however, that the surveyors of the rural district councils were not the men to be entrusted with such schemes. The Institute should express an opinion as to the way in which these schemes should be dealt with.

The Chairman said the discussion showed that architects were keenly interested in the subject. The only matter on which they split was that of finance, and he agreed with Mr. Jemmett that it did not matter to them as architects who found the money.

Professor Lethaby moved a resolution asking the Council of the Institute to consider the matter with the view of forming a constructive policy, but withdrew it on hearing a suggested resolution by Professor Adshead.

Professor Adshead proposed:—"That the Council be asked to report as to what can be done by the Institute to interest and associate the profession in the housing question and in particular to consider the feasibility of taking such action as shall result in the allied societies throughout the Kingdom taking active measures to consider the housing needs and housing problems in their area."

Mr. H. V. Lanchester seconded the resolution, which was carried.

University College, London.

The annual report of University College, London, has just been issued. It appears that, whereas in normal times the total number of students, day and evening, amounts to about 2,200, the number last session was 1,240. This number included 121 members of H.M. Naval and Military Forces, for whom special courses were provided, and 159 who attended special vacation courses, so that the actual number of ordinary students was 960, of whom 547 were women. The report further shows that, whereas the normal fee revenue amounts to between £29,000 and £30,000 a year, the fee revenue last year was only £14,000. The report shows that, while the ordinary activities of the College have been maintained to meet the needs of the students actually in attendance, all available energies have been directed towards war purposes, of which some account is given, but obviously details must be held over until the end of the war. The Pro Patria list includes about 2,500 names of past and present members of the College, who are taking an active part in one or other of the services connected with the war. Of these, 195 have already fallen. The list of honours and distinctions gained in the war is a long one.

CORRESPONDENCE.

The Future of British Architecture.

SIR,—I hope that the suggestions made by Sir Aston Webb in your issue of March 8, and by Mr. John Murray in his important letter of March 1, will be very carefully considered by the Council of the Institute. It is impossible to blink the fact that the attitude taken up by the authorities towards the profession of architecture in the first year of the war caused grave disquietude, and there is a widespread feeling among members of the profession that our position in regard to the public, to the official authorities, and as amongst ourselves, demands the most anxious consideration. An important stage in the direction of a settlement was arrived at before the war, by the resolution of the Institute passed by a large majority at the general meeting of June 29, 1914. I suggest that the matter be taken up again at this point, and handled in a broad constructive and sympathetic spirit. If necessary, we must not shrink from going outside the methods and the organisation that may have served us well in the past, but which are showing signs of failure under rapidly changing conditions. The first step is to ascertain quite plainly and without any mincing matters, how we stand, what as architects we are out to do, and are likely to be called upon to do; how we can best unite for this purpose instead of pulling against each other, and most important of all, what aims and objects we are going to set before our younger men when they return, and what training is the best adapted to fit them for their attainment of these ends. The Council may well take as its object, "a complete, comprehensive and generous scheme of reconstruction," as Sir Aston Webb happily puts it, and on the lines that he suggests and in so doing I am convinced that they will have the support of all who have the serious interests of architecture at heart.

REGINALD BLOMFIELD.

SIR,—At the time when so much discussion is going on at the R.I.B.A. as to work after the war, the want of cohesion among architects, the lack of recognition by the public and the numerous difficulties with which we are beset, Mr. John Murray's résumé of the position of architecture and architects at the present time—*vide* his letter in your issue of the 1st inst.—is the most valuable statement which has yet appeared, inasmuch as he shows the necessity for early and vigorous action on the part of the Council of the R.I.B.A. to take such steps as may conduce to a better understanding of the needs of the public and the real interests of architects.

I have no desire to be a carping critic of those who have been or may be in office, and the following impressions are merely set forth to indicate that there are many points of internal economy which need consideration and which, in some measure at least, may account for the lack of a definite forward policy; as until by strong decisive action the R.I.B.A. takes the lead and produces definite results, instead of allowing matters to drift, all the vapourings of the theorists are merely camouflage and will not help the present or future architect far on his path in the *practice* of architecture, or the education of the public to a belief in the necessity for good architecture as an asset to themselves and the country.

One has only to peruse the reports of the "Informal Conferences" which have taken place at the R.I.B.A. during the war to realise how visionary and unpractical are many of the proposals which have been made thereat towards helping the younger men or advancing the art of architecture.

That so little use has been made of architects by the Government in the vast quantity of work carried out for the purpose of the war is the greatest slur that could have been placed upon a body of professional men whose life-work should have made them a great asset in such times as we have been passing through. Instead of which, there is no body of men who have been more severely "hit" or whose skill has been made less use of.

Surely we should at least try and find out the cause and seek to prevent its recurrence? True, a certain number (comparatively few) of our profession have found places or been given work under the Government, but with frosty results to the profession, as was only too evident when Mr. Wills' motion *re* "work after the war" was discussed at a recent meeting.

Where is there any evidence that any weight has been given to the counsels of our representatives on subjects which are of vital importance to the public, our clients, or to the body of architects throughout the country?

And the public hold us in similar light estimation; for, as I pointed out at a recent "Informal Conference," when a visionary scheme of architects working under some kind of guild on co-operative lines was discussed, the public, on the whole, only come to us when forced to do so as go-betweens to protect their interests, and not because they *need* architects *qua* architects and to obtain good architecture.

Why is this? How does an architect first obtain work? He must not seek it. He dare not advertise; that would be a breach of professional etiquette! He must not pay a commission for the introduction of work. He must not even put his name on a building in course of erection. Why, that would inform the public that such a being as an architect existed, and it might even help them to distinguish in time between the work of good and that of indifferent men and so help the cause of architecture! As it is, the public are confronted with numerous boards upon buildings in course of erection which inform them as to the builder and the so-called "specialists" (who increase daily), and so get "put into touch" with people who are fast obtaining independently the work which should go to architects.

Mr. Murray has ably summarised the position. It is largely that architects are not trained up to the standard of modern requirements and in many cases have to depend upon others to supply the scientific part of their work. In fact, the scientific side—including surveyor's work—is looked down upon by the so-called æsthetic architects and so work properly belonging to our profession is fast drifting into other channels. What the "specialist" does not filch the "decorator" does, and there is no one to point out to the public how dearly they pay for work upon which they congratulate themselves as "doing it without having to call in an architect"! How many of such cases come under our notice? I feel there must be something lacking in our professional societies which do nothing to provide against this state of things. What is needed is unity and closer touch with the real interests of the public and of the profession, and this points to the desirability of one great central body and to the registration of all qualified architects, whose headquarters should, as Mr. Murray suggests, be worthy of our profession and command the attention of the public.

The mention of "qualification" naturally draws attention to the R.I.B.A. examinations. Art, with a big A, bulks largely in the talk at the Institute, and its examinations are conducted, as every examiner knows, with that big A very much in the foreground, the result being that the greater number of the candidates come up for examination ill-prepared on the scientific side of our work. It is only recently that candidates have been allowed to take the final examination in two stages (a very wise step, which needs further development), but until the scientific and practice side of the qualifying examination is stiffened, candidates will be ill-equipped to fight the battle of the modern architect. I have urged these views on many occasions; but while the elections at the Institute are mostly won by the fame of the rival candidates—based largely upon their drawings published in the professional journals, and thereby gaining the provincial votes—so long will the one-sidedness of these elections affect the practice of architecture, as the scientific and practice side gets little consideration for lack of Councillors able to see and press to the front the real interests of the profession.

If, therefore, as Mr. Murray suggests, the Councillors of the profession would widen their views, study the needs of the public and open the Council Chamber to men of science as well as art, there would be more chance of putting forward for the encouragement of architecture and aid of the young men, schemes which would help to fit them for the practice of our profession and in time produce men whom the public could be taught to look up to and whose work they would appreciate. Of course, these remarks are for the "rank and file," and do not apply to men who, by their genius or business capacity, have achieved success—they do not want catering for—but it must be remembered that these successful men do only a comparatively small amount of the total architectural work of the country. I have often whilst listening to some of our successful men at the Institute when they have protested against the "commercial spirit" and our always talking about the "schedule of charges," wondered whether they can really see further than the walls of their own delightful studios.

Even now there are (and have been for a long period) discussions proceeding upon the "scale of charges," with, I fear, a very timorous spirit on the part of many who, being largely dependent on outside aid for the scientific part of their work, are afraid that any increase in this sadly out-of-date scale will lead to a loss of work.

Are architects in these days to be the only body who are not to be properly paid for their work? Can it be possible that a scale laid down many years ago can now, for work properly done, represent anything like a fair remuneration for the work a really qualified architect has to do to-day? Now that our whole future is in a state of flux is surely the time to equip ourselves for a fresh start and to settle this much-debated question, in time to deal with our prospective clients on a new basis and not foolishly to continue on lines which should have been obsolete years ago.

Let the architect be properly educated to the requirements of modern construction and modern work, and train the public in the knowledge that there is at least a body of men known as architects and upon whom they can rely, and there will be plenty of work for them to do at proper remuneration if they only establish their claim on a proper basis of skill and knowledge.

We should also revise the pupilage system, but under better conditions, and not allow young men who have spent a year or two in one of the schools of architecture to imagine they have grasped the whole knowledge and being of an architect's practice, and fitted themselves to act for the public in the capacity of architects, without having had proper training in the actual carrying out of work and the business side of our work.

Ill-trained men are the cause of many of the troubles from which our profession suffers; our law cases show this; and only by the registration of qualified men can a remedy be found.

I suggest that the Council of the R.I.B.A. should take Mr. Murray's letter seriously to heart and form a special committee of representative men to consider the whole "Practice of Modern Architecture in relation to the Art (and Science) of Architecture, the Public, and Architects."

W. HENRY WHITE, F.R.I.B.A.

March 5, 1918.

[*** Other letters are held over until next week for want of space.—ED.]

The Late Mr. Edward Stott, A.R.A.

Mr. Edward Stott, A.R.A., who has died at Amberley, Sussex, after an illness of some weeks, was born at Rochdale, Lancashire, and educated at the Grammar School there and at King's School, Ely. He studied his art in Paris, chiefly at the Ecole des Beaux Arts, under Cabanel, and for some time under Carolus Duran.

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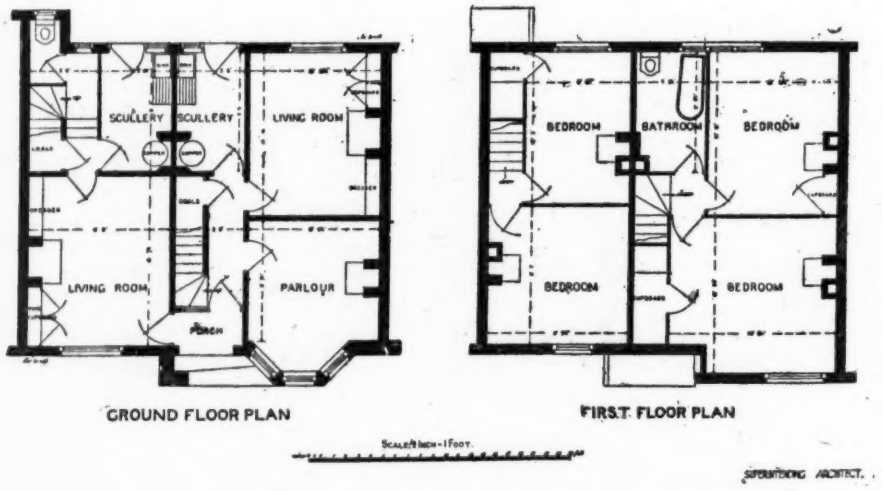
ILLUSTRATIONS.

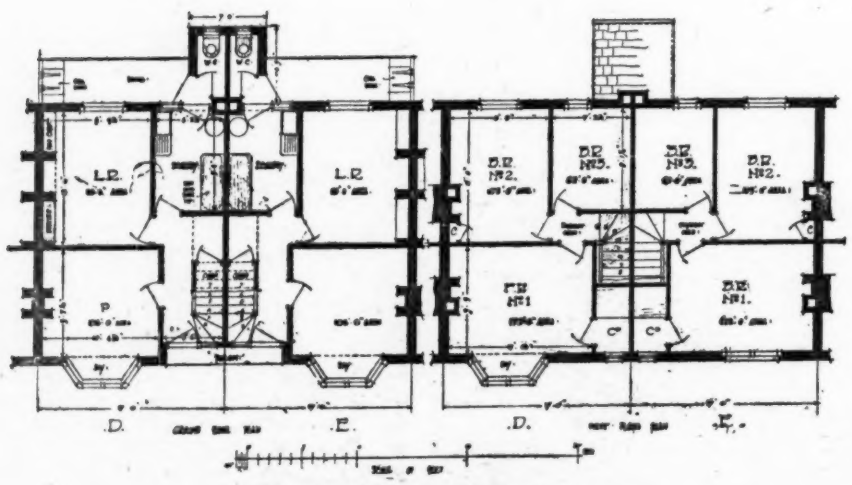
OUR inset illustrations are of work carried out by the L.C.C. under the superintendence of Mr. W. E. Riley, and are referred to in an article on the next page.

Deceased Builder's Estate.

Mr. Walter Bell, of 156, Effingham-street, Rotherham, Yorks, who died on February 17, 1916, builder and contractor, left estate of the gross value of £36,965 19s. 10d., of which £11,813 18s. 4d. is net personalty.

L·C·C·OLD OAK ESTATE·





L.C.C. Totterdown Fields Estate.

(See our last issue for other illustrations of Totterdown Fields scheme.)

MR. W. E. RILEY, F.R.I.B.A., Superintending Architect, L.C.C.

GENERAL NEWS.

Good Friday Week.

In consequence of the Easter holidays we go to press a day earlier than usual next week, the *Builder* being published on Thursday. All communications must reach the Editor by first post on Tuesday morning.

Control of Timber Haulage.

The Army Council have issued an Order providing for the regulation of the haulage of timber with the object of preventing congestion of traffic and excessive damage to public roads outside the administrative county of London. Persons engaged in timber haulage must obey the directions of the Road Control officers appointed to control such traffic.

The Liverpool and District Association of House Builders.

At a meeting of this Association, held on the 13th inst., the following resolution was unanimously passed:—"The Liverpool and District Association of House Builders welcomes the memorandum by the Council of the Surveyors' Institution on the points raised by Sir Noel Kershaw, K.C.B., at the deputation to the Local Government Board on December 7, 1917, endorses its general principle as being the only practical scheme before the country for the erection of houses immediately after the war, on an economic basis, and urges the Government to adopt same."

St. Olave's Church.

The promoters of the St. Olave (Southwark) Church Bill have intimated to the London County Council that they are willing to insert amendments providing for the removal of the building to a new site, so that its architectural features may be preserved, and for allocating £5,000 to the Council to provide an open space in the neighbourhood or elsewhere. The County Council is asked to withdraw its opposition provided that the suggested addition of a chancel be not made, that a memorial more elaborate than a tablet be placed on the building to be erected on the old site, and that the name St. Olave be perpetuated in connection with the parishes with which the present parish will in future be associated.

Lectures to Wounded Men, Great Northern Central Hospital.

A lecture on "Reconstruction and Education" was recently given by Mr. Shadrach Hicks, Principal of the London County Council Shoreditch Technical Institute, to the wounded men at the Great Northern Central Hospital. The lecturer dealt with the various social and political problems which would require to be dealt with after the war, including food supplies, land tenure, housing, and education. He pointed out that a time of reconstruction required the most careful and unselfish attitude on the part of the whole nation. The safety of the future depended on the provision of a generous education of the masses of the people from whom new industries, discoveries, and more extensive organisation and distribution could be expected.

Memorials to the Fallen.

The following awards are announced in the competition held for designs for a memorial plaque to be presented to the next-of-kin of members of the forces who have fallen in the war:—

£250 to "Pyramus" (Mr. E. Carter Preston, Sandon Studios Society, Liberty-buildings, School-lane, Liverpool), whose model is selected for reproduction.

£100 to "Moolie" (Mr. Charles Wheeler, Justice-walk Studios, Chelsea).

£50 each to "Sculpengre" (Mr. William McMillan, Cheyne-row, Chelsea); "Weary" (Sapper G. D. Macdougald, 207290, Council-chambers, Beaconsfield, Bucks); and "Zero" (Miss A. F. Whiteside, Kensington Studios, Kelso-place, S.W.).

The work of the following competitors was considered worthy of honourable mention:—"Astra Castra," "Athenian," "Bee," "Canada," "Casual," "Cross," "Désirée," "Fluvius," "Gaza," "Intrepidus," "Litigation," "Nomen est Omen," "Oneiros," "Pink," "Red Shield," "Rex Royal," "Sun" A, "Sun" B, and "Wattle Blossom."

Awards to Travellers.

The Royal medals of the Royal Geographical Society have, with the approval of the King, been awarded as follows:—

The Founder's Medal.—Miss Gertrude Bell, for her important explorations and travels in Asia Minor, Syria, Arabia, and on the Euphrates.

The Patron's Medal.—Commandant Tilho, French Colonial Infantry, for his long-continued surveys and explorations in Northern Africa.

Owing to the scarcity of gold the medals will, with the approval of the King, be struck in bronze instead of gold, and the balance will be given in War Bonds. The other awards are as follows:—

The Murchison Grant.—Mr. C. A. Reid, for his maps of the Belgian Congo, which he has placed at the disposal of the Society.

The Cuthbert Peek Grant.—Mr. G. F. Archer, for his surveys in East Africa connecting Major Gwynn's Abyssinian triangulations with the triangulation of East Africa.

The Back Grant.—Captain Bartlett, for his distinguished leadership after the loss of the Karluk.

The Gill Memorial.—Dr. Cuthbert Christy, for his surveys and explorations in Central Africa.

MUNICIPAL HOUSING.

THE LONDON COUNTY COUNCIL: No. 2.

THE Norbury Estate is about two miles from Croydon. About 30 acres were purchased at a price of £18,000, and to this about 1¼ acres were added by the purchase of adjoining property. Some 17 acres of the site have been developed, on which accommodation for 3,638 persons in 493 cottages has been provided. 164 of these contain three rooms, 286 four rooms, 48 five rooms, and 108 of these have one bedroom under 96 sq. ft. The rents charged for three rooms are 7s. to 8s.; three rooms, with small additional bedroom, 8s. 6d. to 9s.; four rooms, 8s. 6d. to 10s. 6d.; five rooms, 10s. 6d. to 11s. 6d. The accommodation was at one time largely occupied by persons who were neither employed nor resident in the county; but more recently it was found that out of 217 families resident on the estate the head of the family was employed within the county in 140 cases. With the exception of the cheapest class of three-roomed cottages, baths are provided in the sculleries, while in a large number, separate bath rooms have been provided. Up to March, 1917 about £170,000 had been expended.

As will be seen from our illustrations there is much variety of treatment in the various estates we refer to; Norbury, for example, being very similar to and suggestive of a private estate developed on good lines, while, in the lay out and detail of the Old Oak Estate, which we give this week, a more picturesque and varied type of arrangement and grouping has been adopted; the size, outline and contour of the sites in each case suggesting a pleasant variation of treatment. The Old Oak Estate is situated on the western boundary of the borough of Hammersmith, bounded on the north by Wormwood Scrubbs, and the ground rising towards the north-west and affording extensive views. The site originally contained about 54¼ acres, the purchase price being £29,858, or about £550 an acre. The Great Western Railway subsequently obtained running powers across the estate, and acquired nearly 8 acres for this purpose, for which and the damage sustained by the estate they paid the Council £10,500.

The section west of the railway is almost completely developed, and is about 14 acres in extent. Five shops and 319 cottages and cottage flats have been provided for the accommodation of 2,231 persons. Sixty-five contain five rooms, scullery, and bath, let at 11s. 6d. a week to 13s. a week; 105 have four rooms, scullery, and bath, let at 9s. to 11s. a week; 106 three rooms and a scullery, let at 6s. 6d. to 9s. 6d. a week; and 17, two rooms and a scullery, let at 4s. 6d. to 5s. a week. Ten will be two-room flats, let at 5s. a week; and 16, one-room flats let at 4s. a week.

The estate embodies the more recent developments in cottage housing in London, and an endeavour has been made to meet the demand for smaller cottages which can be let at rentals within the reach of those earning 25s. and 30s. a week. The needs of smaller families of the poorer class have also been considered, and as an experiment a limited number of tenements of one, two and three rooms have been provided. It is not proposed to let the smallest one-roomed tenements except to old married couples, or to two persons of the same sex.

The scheme for the development of the section lying to the east of the railway provides for the erection of 721 cottages and 2 shops, and will accommodate 5,330 persons. A school will be provided and a site reserved for a church to be erected by the Ecclesiastical Commissioners. This estate has been a great success, and a long list of prospective tenants are now waiting for the erection of further cottages.

A further experiment is proposed to enable tenants to purchase the leases of their own houses, on the basis of leases of 99 years, the leases being granted to occupiers on payment of a deposit of £5. The lessee is asked to pay during the term the equivalent of the ground rent in addition to equal instalments of the purchase money for the first 15, 20, or 25 years, sufficient to pay the amount expended on land and buildings, less the deposit, and the capitalised value of the ground rent, interest, legal, and other costs and establishment charges. The lessee has to satisfy the Council that he intends to live in the house, but will subsequently be allowed to let it, or to transfer the lease. Enquiries are held once a year to ascertain if overcrowding exists, and decided by the adoption of a basis of two persons to each room. Cases of overcrowding are usually dealt with by transferring occupants to larger houses.

The approximate cost of the houses erected on the various estates before the war have been given as under:—

Estate	Five Rooms	Four Rooms	Three Rooms
	£	£	£
Totterdown Fields..	330 ..	280 ..	215
White Hart Lane..	300 ..	250 ..	200
Norbury	330 ..	300 ..	240
Old Oak	340 ..	300 ..	210

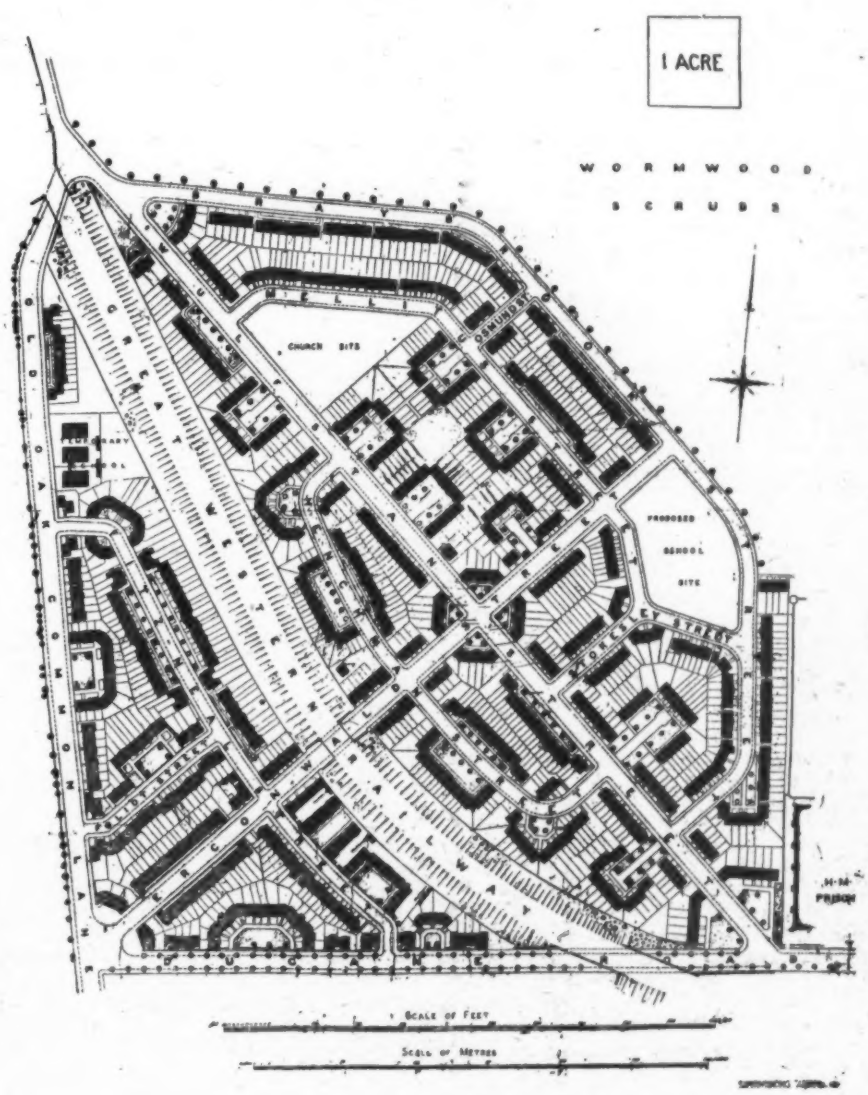
It is impossible, in the limits of a brief article, to do more than generally refer to types of the admirable work which has been so efficiently carried out by the London County Council under the direction of Mr. W. E. Riley, who has had more practical experience in housing than anyone else in the country, and whose work will certainly be considered by those who study the development of London to have contributed in no small degree to render it what it has become—the healthiest of the larger cities of the world. Though the work undertaken by the Sutton Trust and other bodies, and by the borough councils of London, has been extensive and useful, the general character and standard of execution attained in housing by the London County Council has hardly been equalled elsewhere, and certainly not surpassed.

We shall deal, in our next article, with the extensive work which has been carried out by the Corporation of Liverpool, a city in which the housing question has been unusually acute owing to local circumstances.

The Rebuilding of Salonika.

Mr. Thomas H. Mawson, who has just returned from Greece, where he has been in consultation with the Premier, M. Venizelos, on the subject of rebuilding the city of Salonika, which was partly destroyed by fire last year, informed a *Morning Post* representative on Saturday last that the scheme of reconstruction has been provisionally approved by the Greek authorities, and that the Government propose to take early action to give it legislative authority. The Commission had submitted a scheme which contemplates a great extension of the docks, the entire remodelling of the railway system, the erection of two new terminal railway stations, the construction of an underground electric railway system between these two stations, and a complete and up-to-date solution of the traffic problems of a modern shipping and industrial city. The scheme also includes plans for a Greater Salonika, divided into three zones by great public parks on land already owned by the Government, together with a series of public gardens and squares, with broad streets planted with shade trees.

L·C·C·OLD OAK ESTATE



MR. W. E. RILEY, F.R.I.B.A., Superintending Architect, L.C.C.

FUEL ECONOMY IN COOKING APPARATUS.*

LECTURE I. (continued).

Introductory.

The scientific efficiency of electrical cooking, therefore, can obviously be very much greater than any other form of cooking; whether it can be made practically cheaper or not depends partly on the supply companies, partly on the manufacturer, and partly on the provision of appliances for separate purposes, but chiefly on the intelligence of the cook.

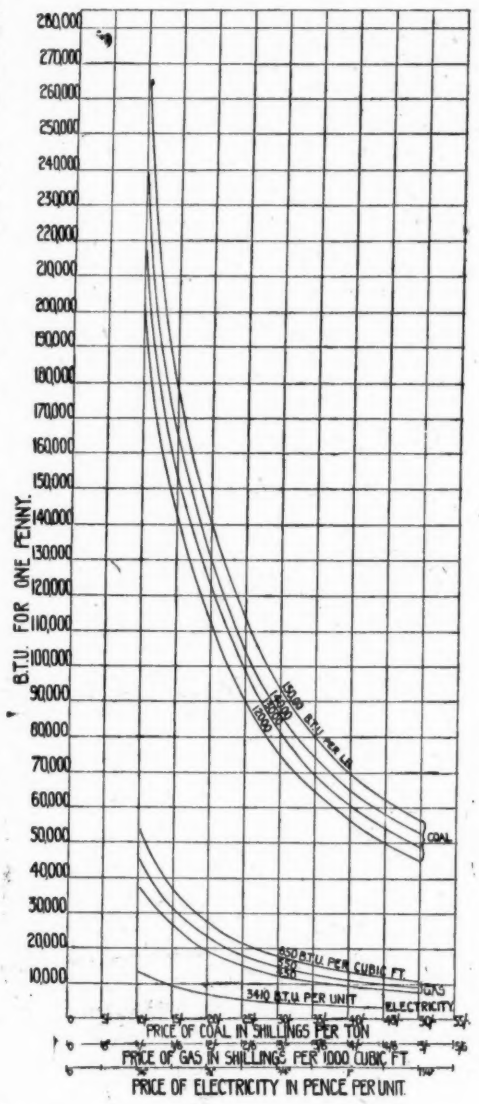
I am not concerned at this moment with a comparison between the relative waste of the food itself as between a freely ventilated device such as a gas oven and closed space such as an electrical oven. I shall have to refer to these facts later.

Future Possible Remedies for Loss of Heat.

The above statement emphasises the great and inevitable waste of energy imposed on us by the ignorance of modern science of any method of using the energy of fuel for the production of heat without burning it with air. Methods of utilising it without this grave drawback are easily conceivable, although not yet within the range of practical politics. Suppose, for instance, we could discover some cheap solid substance "x," having a powerful affinity for carbon and which would, therefore, combine with it and give off heat, leaving behind a stable, solid residue which we may call carbide of "x." We could then use the heat energy very economically with a small apparatus and without any flues, and carefully guard against the escape of heat, for the volume of what may be called the products of combustion would then be of manageable dimensions. When air is used this volume is so great that we are unable to use up the heat they contain for heating purposes on any but a very large and expensive apparatus which up to the present has not been economically justified. Or suppose we should one day learn how to convert the energy of the fuel directly into electrical energy with very little loss. There can be no question that such a discovery would instantly revolutionise not only cooking but also heating and multitudes of industrial processes.

Gross and Nett Cost of Heat.

Let us now consider the gross amount of heat that can be obtained from a unit of the three forms, solid, gaseous, and electrical, and also consider how much of each of these forms can be obtained for one penny. It must be carefully noted that all these figures are fundamental. We cannot conceivably obtain more than 3,410 B.T.U. from one unit of electricity, however we use it, nor can we get from a cubic foot of gas more than the number of heat units it contains, which varies according to the quality of the gas. Of course the quality of electricity in this sense does not vary. It would be as useless to try to get more than 3,410 units of heat out of one unit of electricity as it would be to try to get 10 pints of water out of a gallon jar. In each case we must reckon on these figures as the extreme possible maximum. Thus the most that we can hope to do is to save as much of the 3,410 from being wasted as we can; not try to take more out of it than there is in it. Now the economical question as to which is in practice the cheapest form to use depends simply on how we can use each of these agents so as to produce the least amount of waste and what that amount is. If we find we can only use coal in such a way as to waste 97 per cent. of the heat it contains—and that is approximately what is done in an ordinary range—we can see that instead of getting, say, 74,000 B.T.U. for our penny, we only, in fact, get three per cent. of that amount or 2,220 B.T.U. We have, in fact, to multiply the amount of heat we get for our penny by the figure representing what is called in science the "efficiency" or the proportion of it we can use. We thus get figures representing the useful amount of heat we get for our penny.



Definition of Efficiency of Process.

Then the question, which form of heat is the cheapest, depends entirely on the "efficiency" of the cooking plant employed. I shall deal with this question later. The practical efficiency actually secured again will, of course, vary very greatly with the intelligence with which the apparatus is operated. A careful and intelligent cook will get twice or three times as much work done by a pennyworth of gas, coke, or electricity as a careless or ignorant one; it is therefore of the utmost importance that we should get clear ideas of the question of the essential efficiency of the apparatus itself, so as to eliminate the factor depending upon the management. If we obtain ideas on the subject of efficiency which are not only scientific, but also in conformity with practical utility, we shall see exactly how we stand. A great deal of antagonism is often imagined to exist between the scientific and practical aspect of problems such as this. In reality, far from being mutually antagonistic, it is not too much to say that unless the solution of this problem is scientifically sound, it is utterly worthless, however practical it may be; similarly, however scientifically sound any principle may be, it is utterly worthless in practice unless it is practically sound.

It is therefore not only worth while but absolutely necessary, even at the risk of seeming tedious and pedantic, to consider this question of efficiency in great detail, both from the scientific and practical standpoint, for this is the root of the whole problem. What exactly do we mean when we speak of the heat that we *waste*, and the heat that we *use*, and how are we to compare them in such a way as to give us a clear idea of what we are doing?

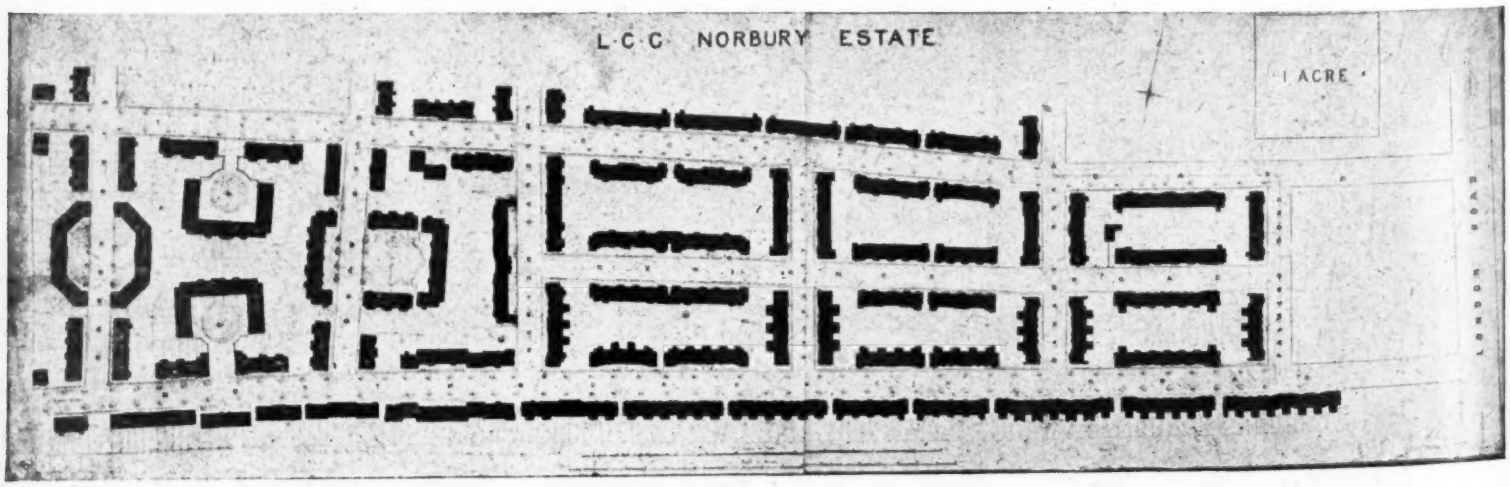
Subdivision of Cooking Operations.

Before we can consider the question of practical efficiency some sort of survey of the operations we are discussing will be necessary, since the definition of practical efficiency will vary according to the process considered.

All cooking operations may be generally divided into

(*a*) Those which involve the maintenance of a

* Second instalment of the first of a course of lectures delivered at the University College, Gower-street, by Mr. A. H. Barker, B.A., B.Sc., on January 23, and subsequently. The first part of the lecture was given in our last issue.



Mr. W. E. RILEY, F.R.I.B.A., Superintending Architect, L.C.C. (See p. 187.)

high temperature in a closed space for a given time, which we may generally term "oven cookery."

(*b*) Those which require a high temperature for a certain time, exposed to free ventilation. This class, for want of a better term, we may generally call "open-air cookery," in which term may perhaps be included for present purposes grilling, frying, sautéing, broiling, toasting, or any operation in which the food during the process is freely exposed to air.

(*c*) Those which require a more or less prolonged exposure to moist heat at a moderate temperature at or below that of boiling water. We may generally speak of this class, which includes boiling and steaming, as "boiling."

All heat treatment of food is a variation of one or other of these general processes.

There is a further sub-division of each of these processes, which must be carefully borne in mind. The application of heat to any cooking process almost always consists of two parts—(1) Raising the temperature of the cooked food, or in some cases of its surface layers only, up to a certain desired point; (2) Maintaining it at that or some lower temperature as long as may be necessary for the purpose of bringing about the chemical changes which constitute the cooking process. It is impossible to lay down a scientific definition of "efficiency" without having careful regard to this difference. The first of these processes always involves a physically necessary expenditure of heat. It is easily possible to conceive that the second process can sometimes be obtained with practically no expenditure of heat, provided we prevent the escape of heat from the hot food or from the vessel in which it is contained. Thus, for instance, we might conceive the food, after it had been raised in temperature by some means, to be transferred from the heating vessel into a large Thermos flask, a well-known device for keeping liquids hot for long periods. If this were done the only expenditure of heat we should require would be that required to raise the temperature of food in the first place. Indeed a crude form of this process is already in use in the form of what is known as "haybox" cookery, in which the hot vessel is placed in a non-conducting box surrounded by hay which has the property of making difficult the passage of heat. If such a device as this is in use, it is evident that we must specify for all plant two different kinds of "efficiency"—(1) representing the economy of the heating-up process, and (2) the degree of economy attained in the maintenance of temperature. The table gives an idea of the temperatures and times we are dealing with.

TABLE I.

Table of Temperatures and Times Required.

(A) OVEN COOKERS.

Kind of Food.	Enter at	Keep at	Time.
Roast Meats..	480° F.	350° F.	¼ hour per in. thick + ¼ hour.
Pork	480°	.. 300°	.. 3 to 4 hours.
Fish	425°	.. 350°	.. 10 to 15 min.
Bread ..	440°	.. 400°	.. 45 to 60 min.
Puff Paste ..	480°	.. 450°	.. 10 to 30 min.
Plain Cake ..	380°	.. 380°	.. 40 to 60 min.
Sponge Cake..	350°	.. 340°	.. Various.
Ginger Bread	380°	.. 380°	.. 5 to 10 min.

(B) BOILING.

Meat (4 to 5 lb.)	212°	.. 180°	.. 2 to 5 hours.
Fish (2 to 5 lb.)	—	.. —	.. 30 to 45 min.
Ham (12 to 14 lb.)	212°	.. 212°	.. 4 to 5 hours
VEGETABLES.			
Carrots ..	212°	.. 212°	.. 1 hour.
Onions ..	212°	.. 212°	.. 40 to 60 min.
Peas & Beans	212°	.. 212°	.. 20 to 60 min.
Potatoes ..	212°	.. 212°	.. 15 to 25 min.

Cooking Temperatures and time used at Chicago School of Cooking.

These temperatures are taken from the bulletin of the Chicago School of Cookery and are too high according to the best English authorities. They are to be regarded as the maximum requirements.

Efficiency of Operations.

To define the expression "efficiency" in scientific terms in the case of any heat treatment is an exceedingly difficult undertaking, on account of the many different ways in which the term may be regarded and the complexity of the facts of which it endeavours to take account.

The true scientific or total "efficiency" of any process whatever is essentially the ratio between the quantity of energy physically necessary to do the work on the one hand, and on the other that which for practical reasons has to be employed for the purpose. The simplest illustration of this in connection with cooking would be to consider the raising of a gallon of water from, say, 60 degrees to the boiling point by placing the vessel on a gas ring. To raise the temperature of the water we need theoretically 1,520 heat units, without the expenditure of which it would be physically inconceivable that the temperature should be raised. If in order to boil this gallon of water by gas we find we must use, say, 8 cubic feet of gas, each of which contains, say, 480 heat units, the total or scientific efficiency of the process referred to gas would be $\frac{1520 \times 100}{480 \times 8}$ or, say, 40 per cent. In itself this is simple enough. But gas is not itself a prime natural product. We are concerned principally with the economy of coal, from which the gas is obtained. We can set out in tabular form the approximate amount of coal which corresponds to 1,000 B.T.U. delivered into our kitchen. This is given as follows:—

TABLE II.

Destruction of Coal involved in the Supply of Heat.

GROSS FIGURES.

1,000 B.T.U. gross obtained from Coal	involves the destruction of approximately	0.071 lb. of Coal.	No other products obtained.
1,000 B.T.U. gross obtained from Gas	,, ,,	0.493.	Other products obtained.
1,000 B.T.U. gross obtained from Electricity	,, ,,	0.366.	No other products obtained.

The figures depend on the process employed, and the quality of the products.

Even if we know the amount of gas obtained from 1 lb. of coal, it would be illogical and absurd to estimate this efficiency in terms of the coal used to make the gas, for other products are obtained from the coal at the same time as the gas.

This is a question of course we cannot go into, and which has been already touched upon. Now with electricity, we could refer the "efficiency" to the amount of coal burnt, knowing how much coal corresponds to one unit of electricity, because, when coal is burnt to produce electricity no other by-product is generated; but on the other hand, a great many other things besides coal are needed to produce the electricity—labour, oil, depreciation of plant, interest on capital and so forth, so that even in this case we should be committing the same absurdity as before, but in a negative sense. We are compelled, therefore, to consider the efficiency in each case apart from the ultimate source of the heat-producing agent.

In considering further the experiment of the boiling water, many other practical considerations also arise. It is physically impossible to heat a gallon of water without also heating the vessel in which it is contained, which may weigh perhaps 3 lbs. and have a heat capacity equivalent, perhaps, to 0.72 lb. of water. Are we to include the heating of this vessel in each calculation for efficiency or not? If we are, then the efficiency of the process depends on the extraneous consideration of the weight and design of the vessel; if we make the vessel as light as may be, in order to keep the efficiency high, we make it correspondingly weak. A high efficiency may therefore coexist with low utility, which is undesirable.

Again, if we add extra or auxiliary appliances in order to increase our nominal efficiency we may and probably shall diminish the convenience of the original appliance, make it slower in operation or introduce some other prejudicial effect. It is quite conceivable, therefore, that we might easily make an apparatus so efficient in a scientific sense that it would be impossible to use it for practical reasons. In all practical things we must maintain a balance between the scientific efficiency and practical utility, or we shall fall into absurdity. It is therefore obvious that efficiency is not the only thing to be considered.

Further, consider the case of oven cookery. It is clearly impossible to raise the temperature of the food and of the vessel in which it is contained without also raising the temperature of the oven itself. Are we to take account of this in estimating our efficiency or not? If we are, it is clearly an advantage to have a light oven which may be easily and rapidly heated, whereas a heavy oven may be very durable but it may absorb so much heat that it is rendered very slow and apparently inefficient in action for short operations.

But even this is not the only consideration involved in this matter. It is possible to conceive a design of oven which, once it is heated up, will retain the heat for so long that it can continue to perform cooking operations on the food contained even long after the supply of heat is cut off; that is, it would enable the heat used in process No. 1 to be carried forward or conserved for process No. 2. There are, indeed, many ovens that work entirely on the residual heat, such as some forms of baker's oven. It is therefore evident that the term "efficiency," properly considered, would have to take into account this question of what the oven is really designed to do and whether it is being used to the greatest advantage. The same oven would have an entirely different efficiency according to the use made of it, which is contrary to scientific ideas of efficiency. We shall, therefore, have to lay down in definite terms what we mean by "efficiency" before we can make a general use of the term as an indication of the degree of economy of the design.

Further, there is one other point which should be borne in mind, which is that the simple amount of energy needed to heat up an oven is not of itself, although excessively important from an economical point of view, the prime matter of importance, for an oven is never required to be heated up by itself except with the object of placing food in it. It might well be that an oven which had a high running efficiency, when heated up by itself, would heat up a given weight or a particular amount of food placed within it so slowly that a large amount of heat would be lost in the process. The efficiency would change every time the weight of food inside the oven was changed; this again is absolutely contrary to any scientific principles.

(*To be continued.*)

A London Docks Garden City.

Mr. Cecil Harmsworth, M.P., at the annual meeting of the Garden Cities and Town Planning Association said that it was to be hoped that in the building of the thousands of houses that would be required after the war the principles of the Association would be followed, so that a new basis of home life could be provided. A great opportunity for this existed in the development of London's docks, where, under wise direction, it might be possible to spread the surplus population of East London over the open land of Essex.

THE BUILDING TRADE.

THE BRITISH INDUSTRIES FAIR.

THIS year's British Industries Fair shows a great advance on its predecessors and affords evidence that our manufacturers appreciate the efforts which are being made by the Board of Trade to promote trade after the war. But like the exhibitions of former years it also shows how much leeway we have to make up if we are to compete successfully with the foreign products of countries where the value of education in design is more studied; especially in the case of France, with all craft manufactures, and in the case of America and Germany, with printing, the design and production of posters, and many other of the lesser wants of daily life. Whether foreign goods are to be excluded or penalised by tariffs here may be uncertain, but it is absolutely necessary for the welfare of our manufacturers that makers should raise the æsthetic standard of the hundreds of small things which find ready purchasers, and the merits of which depend more on design even than on workmanship.

The prominence of France, which has secured such bountiful commercial harvests for her people, rests on design and could not have been achieved unless generations of her people had pursued a steady policy, without which Saxon porcelain would not have been replaced by that of Sèvres.

The exhibition of German and Austrian goods held some years ago at Goldsmiths' Hall showed how much we have to learn from Germany and Austria in the arts connected with printing and colour reproduction; and while there is plenty of evidence in the present exhibition that toy-making has been taken up vigorously by our manufacturers, there is little which shows marked progress in invention or ingenuity in the present exhibition, and there is a tendency towards the unlimited production of rather unmeaning grotesques which is to be regretted. It is doubtful whether any modern nation, with the possible exception of Germany, has the genuine taste for the grotesque which played so large a part in mediæval art; it is quite certain that what is not inspired by that spirit is wearisome and unmeaning, and becomes a pandering to an ignoble and deformed instinct, which disfigures many of our illustrated papers; and when this instinct is indulged by the toy-maker, it is especially unattractive. The average child's taste can be readily gauged by remembering the enduring success of "Peter Pan," compared with that of the most expensively produced pantomime, and the value attached to "Alice in Wonderland," as illustrated by Tenniel, when compared with a good many of the books now produced for children; the lesson being that we can amuse with fancy while we simply puzzle by adopting a method of caricature.

The best work exhibited is, we think, some of the pottery shown, much of which is good alike in form and colour. Messrs. Robinson & Sons, Stoke-on-Trent, show some excellent striped and other ware manufactured to replace the work produced by German and Austrian peasant industries. The "Wardle" Art Pottery exhibited is composed of pots, flower-holders, vases, and bowls, which are singularly effective both in colour and in form. The Deal Potteries, Ltd., manufacture a class of art pottery of good form and very pleasing colouring which is perhaps of more outstanding aesthetic merit than anything else shown. The Moorcroft Ware is good work of a more finished type, which is shown in the form of tea and dinner sets, bowls, vases and other objects.

Yet here, again, the result is not wholly satisfactory. Many of the best-known firms, like Messrs. Wedgwood, do not exhibit, or are only represented by small and incomplete stalls; and what is the reason that the majority of the work shown is without pattern? What should we say of an exhibition of wall papers in which nothing but self-coloured papers were shown? Surely, our conclusion would be, not that patterned papers were bad, but that our manufacturers could not agree as to what constituted sound design. It is this fundamental indecision which shows what is needed and what education alone can supply—a consensus of opinion on the subject of the fundamentals of design as applied to the handicrafts. The recent conference held between representatives of the pottery firms and the Design and Industries Association, which we have commented on, shows what a division of opinion exists on this point—a difference which must be bridged over if our arts and crafts are to flourish commercially as we hope they will. And this question is closely connected with the larger question of art education—the Government schools existing, in the opinion of good judges, for the manufacture not of craftsmen but of art teachers, who tread the same unending round of repetition, leaving their pupils to do the same. In the interests of national economy, we must alter all this, and must devise a method which will give life and spirit to the modern arts and crafts.

We cannot afford longer to pursue a course which is wasteful of the best material in the nation, which either discourages effort and forces us to look for our best work to careful repetitions of former designs, or, on the other hand, drives us to a tentative effort to avoid the whole question by eliminating design. What the limited resources of France in former centuries established on a firm basis, which has steadily grown in spite of convulsions which have shaken Governments, should surely not be impossible in the centre of the British power in the twentieth century! We may say that foreign trade has been enriched at our expense, not only on account of our willingness to admit imports free, but very largely because we have forgotten to remember the commercial value of design. Taking a smaller example of the same defect, we have in this exhibition the work of dozens of makers of dolls, but we have no evidence that any one of them recognizes that the modelling of the face of a doll, which is to be produced in replica thousands of times, is an object worthy of the services of an able craftsman or even artist. The firm which first recognizes that this is so will be commercially rewarded; the firms which do not may spend their existence in severe competition with others equally blind to their own interest, when thought and method would give them a lead.

And the same criticism applies to the countless superfluous ornaments with which people find it necessary to fill their rooms, as we are reminded by the present exhibition. For the most part, they serve little useful purpose; but, as people will have them, they might at least be intrinsically good in design, and, if so, what a field of invention would be opened out for our craftsmen! We collect old snuff boxes and ginger jars, not because we want to use them, but because of their beauty and quaintness of design; but what person of judgment and taste would dream of collecting the modern bric-à-brac in an ordinary house. And yet, if we could obtain excellence of design, we should not only want these things ourselves, but they might pass down to further generations as heirlooms. And what thoughtful and painstaking design is done by a few in our midst is often peculiar and affected, because it is a sporadic and isolated growth, and is looked upon as being "precious" instead of being the spontaneous birth of a traditional school of design.

We are glad to see further evidence that we are regaining lost ground in many directions of glass production which we hope shall never, as before, be almost the exclusive field of the enterprising German or Austrian manufacturer.

The work in leather goods shows an advance, and the Cordwainers Company have instituted a scheme which will at one and the same time give needed work to disabled soldiers and advance the cause of an industry; one of many gratifying proofs that the oldest institutions in the country are actuated by a progressive spirit now as in past times.

Among the printing section we specially commend the admirable work of the Medici and Fine Arts Society, which set a standard of excellence which their fellow firms too seldom try to emulate.

In conclusion, we may congratulate the Board of Trade on having helped to bring an important subject to the attention of the nation; but we must emphasise the relation of design to commerce, and add that we shall never reach the firm ground from which we can defy foreign competition unless we overhaul our system of art education from top to bottom, and remember that even the best of commercial agents can expect success only if the quality of his goods warrants it.

We hope that in succeeding years we shall have more to commend, but this will not be the case if attention is concentrated on the purely trade side, forgetting the more important element of art education.

BOOKS.

Laxton's Builders' Price Book for 1918. Originally compiled by William Laxton. One hundred and first edition. (London: Printed and published by Kelly's Directories, Ltd., 182, 183 and 184, High Holborn, W.C. 1.)

Lockwood's Builder's, Architect's, Contractor's and Engineer's Price Book for 1918. Edited by R. Stephen Ayling, F.R.I.B.A., M.R., San. I. (London: Crosby Lockwood & Son, 7, Stationers' Hall Court, Ludgate-hill, E.C. 4.)

TAKING into consideration the abnormal state of things throughout the so-called civilised world, and still further the effect such a state of things has had upon the building trade, one can have a certain admiration for those who are determined to 'carry on" under any circumstances. That feeling of admiration precludes one from attempting severely to criticise the well-intentioned efforts to produce these annual volumes under almost insurmountable difficulties. What has been said year after year in dealing with these well-known works can only be repeated with possibly greater reservation than usual as to the necessity of adapting such works to the special cases. In both works a serious attempt has been made at revision—in the first-named by alteration of prices, and in the second by placing at the foot of each page the approximate percentage of increase.

In examining 'Laxton" one is struck by the items of daywork prices, *e.g.*, bricklayer, per hour, 1s. 4d.; ditto, on buildings for munition works, 1s. 8d.; labourer, per hour, 11d.; ditto, on buildings for munition works, 1s. 4d. This applies to all labour prices, and suggests to the reader some reason for the difficulty in dealing with the demands of mechanics engaged on works other than Government undertakings. In our experience we have known works for private firms going on smoothly until a Government factory has been started in the area, when the men immediately migrate to the higher rated job, for which they can hardly be condemned, and this migration is only stopped by the raising of wages to one level.

"Lockwood" does not recognise this distinction, but takes the average prices between the two.

The trouble is only being overcome by the general rise, but one trembles to think what the effect of this general rise will be upon future building operations.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	11	11	11	11	11	10½	10	8	8	8
Accrington	11½	11½	11	9½	9	10	9½	7	7	7
Altrincham	1/2	1/2	1/3	1/2	1/-	1/1	1/-	10	11	10
Ashton-under-Lyne	1/1	1/2	1/1½	1/1	1/1	1/2	1/-	9½	10	10
Barnsley	1/0½	11½	11½	11½	1/-	1/-	9½	9½	9½	9½
Barrow-in-Furness	1/2	1/2	1/2	1/2	1/2	1/2	1/1½	1/-	1/-	1/-
Barry	1/-	1/-	1/-	1/-	—	1/-	11	9	9	9
Bath	11½	11½	11½	11	11	11½	10½	9	9	9
Bedford	11	11	11	11	11	11	9	9	9	9½
Birkenhead	1/2	1/2	1/2	1/1	1/1	1/3	1/2	10½	10½	10½
Birmingham	1/1½§	1/1½§	1/1½§	1/1½§	1/1½§	1/1½§	1/0§	10½§	10½§	10½§
Bishop Auckland	11	11	11	11	1/2	11	10	8	8	8½
Blackburn	1/0½	1/1½	1/1½	11	1/0½	1/1½	1/-	8½	9	9
Blackpool	1/-	11	1/2	9½	8½	9½	10½	6	6	6
Bolton	1/1	1/2	1/2	11½	1/0½	1/2	1/0	7½	7½	10
Bournemouth	11	11	11	11	11	11	10½	8½	8½	8½
Bradford	1/2½	1/2½	1/2	1/1½	1/1½	1/3	1/1	1/-	1/-	1/-
Bridgwater	8½	8½	8½	8½	8½	8	7½	6	6	6
Brighton	1/-	1/-	1/-	1/-	1/-	1/-	10½	9½	9½	9½
Bristol	1/2½	1/2½	1/2½	1/2½	—	1/2½	1/1½	11½	11½	11½
Burnley	1/0½	1/0½	1/0½	1/-	1/-	1/2	1/-	7	7½	7½
Burton-on-Trent	11	11	11	11	11	1₁	10½	8½	8½	8½
Bury	1/2	1/2	1/2	1/1	1/1	1/2	11½	10	10½	10½
Cambridge	11	10½	10½	10½	10½	11	9	7½	7½	7½
Cardiff	1/1½	1/1½	1/1½	1/1½	1/1½	1/2½	1/0½	10½	10½	10½
Chatham	10	10	10	10	10	10	8½	7	7	7
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	9½	9½	9½	9½	—	9½	9½	6½*	6½*	6½
Chester	11½	1/-	1/-	1/-	1/-	1/-	11	7½	8½	8½
Chesterfield	1/-	1/-	11	11	10	11	10½	8-8½	8-8½	8-8½
Colchester	9	9½	9½	10	9	10	7	6½	6½	6½
Coventry	1/2	1/2	1/2	1/2	1/2	1/2	1/1	11½	11½	1/-
Crewe	9	9½	10	10½	10	9½	10	7	7	7½
Darlington	1/1	1/1	1/1	1/1	1/2	1/-	1/-	10	10	10
Derby	1/-	1/-	1/-	1/-	1/-	11½	11½	9	9	9½
Doncaster	10½	1/-	1/-	10½	10½	10	9½	9½	9½	9½
Dudley	9½	1/-	1/-	10	10	9½	8½	9	9	9½
Durham	10½	10½	10½	10½	10½	9½	9	7½	7½	7½
East Glam. and Mon. Valleys	10	10	10	10	—	—	9	7	7	7
Exeter	10	10	10	10	10	10	9	8	8	8
Folkestone	8½	9	9	9½	8½	9	8	7	7	7
Gloucester	10½	11	11	10½	10½	11	10	8½	8½	8½
Grantham	9½	10	9½	9½	10	8½	8	8	7½	8
Grays	—	1/-	1/-	—	—	1/-	10½	—	10	10
Grimsby	11½	1/-	1/-	1/-	1/-	1/-	10	10	10	10
Great Yarmouth	10	10	10	10	10	10	8½	7	7	7
Halifax	1/1½	1/1½	1/1½	1/1½	1/1½	1/2	11	10½	10½	10½
Harrogate	10½	9½	11	9	8	1/-	9½	7½	7½	7½
Hartlepools	1/0½	1/1	1/1	1/1	1/2	10½	1/-	10	10	10½
Hastings	10	10	10	10	10	10	8½	7	7	7
Hereford	10	10	10	10	10	10	9	7½	7½	7½
Huddersfield	1/1½	1/1½	1/1	1/-	1/-	1/-	11	11½	11½	11½
Hull	1/1	1/1	1/1	1/1	1/1	1/-	11½	11	11	11
Ipswich	1/-	1/-	1/-	1/0½	1/-	1/0½	10½	9½	9½	9½
Lancaster	1/-	1/-	1/-	1/-	1/-	1/-	1/-	9	9	9
Leamington Spa	10½	10½	10½	10½	10	10½	9½	7½	7½	7½
Leeds	1/2½	1/2½	1/2	1/2	1/2	1/3	11½	11½	11½	1/-
Leicester	1/1	1/1	1/1	1/1	1/1½	1/1	11½	10½	10½	11
Lincoln	10½	1/-	10½	10½	10½	10½	10	9½	9½	9½
Liverpool	1/2	1/2	1/2	1/2	1/1½	1/3	1/0½	10½	10½	10½
Llanelly	1/1	1/1	1/1	1/1	1/1	1/3	11½	10½	10½	10½
London	1/3½	1/3½	1/3½	1/3½	—	1/3½	1/0½	11½	11½	11½
Loughborough	10	10	10½	10	10	10	9	8½	8½	9½
Luton	10½	10½	10½	11½	10½	11	9½	8	8½	9
Maidstone	10	10	10	10	10	10	9	7	7	7
Manchester	1/3	1/3	1/3	1/3	1/2	1/4	1/3	11	11½	11½
Mansfield	11	11	10½	11	11	10½	11	8	8	8
Merthyr Tydfil	11	11	11	11	11	11	10	8½	8½	8½
Middlesbrough	1/2	1/2	1/2	1/2	1/2	1/2	1/-	11	11	11
Newcastle-on-Tyne	1/2	1/2	1/2	1/2	1/2	1/1	1/1	11	11	11
Newport, Mon.	11½	11½	11½	11½	11½	1/2	10½	8½	8½	8½
Northampton	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Norwich	10½	10½	10½	10½	10½	10½	9½	8	8	8
Nottingham	1/2½	1/2½	1/2½	1/2½	1/2½	1/3	1/1½	1/0½	1/0½	1/0½
Oldham	1/1	1/-	1/2	1/2	11	1/2	1/-	10½	10½	11
Oxford	11	10½	10½	10½	10½	10½	9½	8	8	8
Plymouth	1/2*	1/2*	1/2*	1/2*	1/2*	1/2*	8½*	8½	8½	8½
Pontypridd	11	11	11	11	11	11	10	8	8	8
Portsmouth	1/-	1/-	1/-	1/-	1/-	11	10	9½	9½	9½
Preston	1/-	1/0½	11½	1/-	1/-	1/-	11½	8½	9	8½
Reading	10½	10½	10½	11	10½	10½	9	7½*	7½*	7½*
Rochdale	1/1	1/1	1/2	1/1	1/1	1/2	1/-	9½	9½	10
Rochester	10	10	10	10	10	10	8½	7	7	7
Rugby	1/-	1/-	1/-	1/0½	1/1	1/-	11	9	9	10
St. Albans	10	10	10	10	10	10	9	8	8	8½
St. Helen's	1/2	1/2	1/2	1/2	1/2	1/2	1/1	8	8	8
Scarborough	9½	9½	9	9½	9½	9½	8½	9	9	9
Sheffield	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11½	11½	11½
Shrewsbury	8½	11½	1/3	9½	—	8½	7	8½	8½	8½
Southampton	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	9½	9½	9½
Southend-on-Sea	10	10	10	10	P'cework	10	9	8	8	8
Southport	11½	11	11½	11	11	1/1	1/1	10	10	10
South Shields	1/2	1/2	1/2	1/2	1/2	1/1*	1/1	11	11	11
Stockport	1/2	1/1½	1/2½	1/-	1/1½	1/2	11½	10	10	10
Stockton-on-Tees	1/2	1/2	1/2	1/2	1/2	10½	1/-	11	11	11
Stoke-on-Trent	11½	11½	11½	11½	—	10½	10½	8½	8½	8½
Stroud	9½	9½	9½	9½	9½	9½	9	7½	7½	7½
Sunderland	1/2	1/2	1/2	1/2	1/2	1/1½	1/1	11	11	11
Swansea	1/1	1/1	1/1	1/1	1/1	1/2	1/0½	10	10	10
Taunton	10	10	10	10	10	10	9	7½	7½	7½
Torquay	10	10	10	10	10	10	10	8	8	8
Wakefield	10	1/-	11½	1/-	1/-	1/1	10	9½	9½	9½
Walsall	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	11½	11½	11½
Warrington	11½	1/0½	1/0½	1/1	1/1	1/0½	11½	8½	9	9½
West Bromwich	11	11	10½	10½	—	10	9	8	8	8
Wigan	1/1½	1/2	1/1½	1/1½	1/0½	1/1½	11½	10	10	10½
Windsor	1/-	1/-	1/-	1/-	1/	1/-	10½	9	9	9
Wolverhampton	1/-§	1/-§	1/-§	1/-§	1/-§	1/-§	10½§	9§	9§	9§
Worcester	9½	1/-	1/-	1/-	1/-	1/-	10	10½	10½	10½
York	1/-	1/-	1/-	1/-	1/-	10½	9½	9½	9½	9½

The Masons' rate given is for bankers; fixers usually ½d. per hour extra.
* War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted.
‖ War bonus of 6s. per week granted. § 1½d. per hour extra for men engaged on munition work.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—It is estimated by the Aberdeen authorities that 1,500 houses will be required in Aberdeen after the war.

AYLESBURY.—Plans passed by T.C.:—Cottage in Bicester-road, for Mr. Bates; drainage to warehouse, for Mr. James Putman. A sum of £200 is to be included in the estimates for extensions to the Council's offices.

BARNES.—Plans and estimates have been submitted to the U.D.C. by the electrical engineer, for the extension of the electricity works. It is proposed to extend the buildings twenty feet in a westerly direction. The cost and equipment is estimated at £12,500.

BRADFORD.—The Architect to the Board of Guardians has reported on the repairs required at St. Luke's Hospital and estimates the total cost at between £900 and £1,000. The Military authorities are to be asked to approve of the work being carried out.

CALLANDER.—Perthshire Branch of the Scottish Veterans' Garden City Association have appointed a sub-committee to prepare a scheme for the building of cottages at Callander.

CARSHALTON.—A L.G.B. inquiry has been held into the application of the U.D.C. for sanction to borrow the sum of £3,914 for the purchase of land as a site for the erection of working-class dwellings.

CAMBERWELL.—Drainage applications passed by B.C.:—At the Prince Albert, 22, Victoria-road, for Messrs. Colley & Sons; at 47 and 49, Grove Dale and at 73 to 83, Goodrich-road, for Messrs. Martin & Co.; at 9, Cornflower-terrace, for Mr. Morris; at 54, Lyndhurst-road, for Mr. Burleton; and at 2a, Harders-road, for Mr. Burr.

DEPTFORD.—Drainage plan passed:—At 76, Tressillian-crescent, for Messrs. Hodson Bros.

DEWSBURY.—Plans passed:—Messrs. Joshua Ellis & Co., workshop, Batley Carr Mills; Mr. Fred Rhodes, alterations to office, Crown Mills, Staincliffe; Cloth Hall Spinning Co., new external staircase, Cloth Hall Spinning Mills; Messrs. George Ellis & Co., chemical laboratory, Savile Mills.

EDINBURGH.—The Electricity Committee decided to ask the Minister of Munitions for leave to proceed with the erection of its proposed power station at Portobello.

EBBW VALE.—At a recent housing conference at Ebbw Vale, it was stated that it was necessary to have 3,000 houses at once to meet the needs of the population.

ELLAND.—An application by the Elland D.C. to prepare a town-planning scheme within their area has been approved by the L.G.B.

FALKIRK.—The directors of the New Cinema at Falkirk intend to make an extension to the operating room, and permission has been given by the local Dean of Guild Court.

FULHAM.—Drainage plans passed:—At Pedrail Engineering Works, Wyfold-road, for Mr. J. Mears; at 454A, Fulham-road, for the Motor Car Coppersmithing and Appliances Co.

GLASGOW.—Glasgow Dean of Guild Court has granted the following linings:—Daniel Kerr, 170, Kilmarnock-road, to convert a dwelling-house at 6, Maitland-avenue, Langside, into two dwelling-houses of four rooms and kitchen each, and to Hutchesons' Hospital to convert two shops at 420–430, Garscube-road into dwelling-houses. The Cassel Cyanide Company, Ltd., to erect an electricity sub-station in Shuna-street, Maryhill; Alexander Chaplin & Co., Ltd., engineers, to erect an erecting shop in Helen-street, Govan; Bennie's Steel Casting Company, Ltd., Parkhead, to erect an electric welding house there; Barclay, Curle & Co., Ltd., Whiteinch, to erect an angle smithy shed in South-street, Whiteinch; Stewarts & Lloyds, Ltd., to alter and extend buildings in Great Eastern-road; the Glasgow Y.M.C.A., to alter buildings at 48–68, Sauchiehall-street.

GRANTHAM.—At a recent meeting of the Grantham T.C. the Deputy-Mayor remarked that it was considered that 250 houses should be provided soon after the war for working men.

HALTWHISTLE.—The P.C. has approved plans of proposed alterations to property in Westgate, Haltwhistle, by Mr. R. E. Hastewell, for the Bank of Liverpool, Ltd. A plan of proposed wooden motor garage in Boat-lane for Mr. Mitchinson has been referred to the D.C.

HAMMERSMITH.—Drainage alterations approved by B.C.:—At 9A, Hythe-road, for Messrs. Waring & Gillow; at Woodger-road for Messrs Perry & Perry; at 22, Brackenbury-road, for Mr. J. J. Edwards. Plans passed by L.C.C.:—New building, 60, Upper Mall, for Mr. E. Cannell.

HIGHBRIDGE.—The U.D.C. has passed plans for new glove factory in Market-street.

KIDSGROVE.—The Kidsgrove U.D.C. has agreed to take immediate steps to ascertain the need for suitable and up-to-date working-class houses at reasonable

* See also our list of Competitions, Contracts, &c., on page 192.

rents, and ask for the financial assistance of the L.G.B., with a view to this Council commencing such a scheme immediately the war is over.

KIRKENTILLOCH.—Kirkintilloch T.C. has approved of a scheme for instituting slipper baths in the Borough, and has agreed to purchase for that purpose the premises in Broad Croft at present used as a laundry.

KINGSWINFORD.—The General Purposes Committee has instructed Mr. W. Meredith (the Council's Surveyor) and Mr. A. T. Butler (architect) to formulate a scheme for housing and town planning, and prepare the necessary plans.

LEEDS.—The Leeds City Council has accepted a scheme for the treatment of persons suffering from tuberculosis. The scheme has been launched in order to meet the urgent demand for institutional accommodation for discharged members of the Forces suffering from tuberculosis. It has been decided to make use of the Gateforth Sanatoria, and it is proposed that any existing accommodation within the mansion house itself be utilised for the purpose of providing extra beds, and, in addition, that a temporary thirty-bed pavilion be erected in the grounds. The cost of erecting and equipping the pavilion, would, it is computed, be £1,500, and of effecting the necessary alterations and inside repairs £300.

LONDON.—The Licensing Justices have sanctioned certain alterations intended to be carried out in the Marquis of Anglesea, Ashmill-street, Lisson-grove (licensee, Henry John Hobbs), and the Canuto Restaurant, Baker-street (licensee, Frances Canuto).

NEWCASTLE.—The Council has sanctioned a proposal to sell 30 of the city's acres on the Walker estate for development by the speculative builder.

NOTTINGHAM.—At a special meeting of the Nottingham City Council formal motions were submitted sanctioning the transfer of the site and buildings of the University College, and a perpetual grant of £15,000 per annum, conditional upon its establishment as a University for the East Midlands.

RAWDON.—In preparation for carrying out a scheme for the erection of houses for the working classes after the war, the Rawdon D.C. have purchased from Mr. Arton, of Rawdon and Tanfield, 18 acres with a frontage to Harrogate main road, and also bounded by roads on the other three sides.

RAWDON AND YEADON.—A proposal has been made at Rawdon for the provision of an institute on Y.M.C.A. lines as a permanent war memorial and the D.C. have passed a resolution in support of the project. The Yeadon D.C. have also had under consideration the question of a permanent war memorial for the township, and have decided to recommend the acquisition of the Town Hall, with the ultimate object of establishing a free library, reading and recreation rooms and baths.

SOUTH SHIELDS.—In a report to the Health Committee of the South Shields T.C. the Medical Officer of Health states that as a result of investigation the conclusion has been arrived at that 2,500 additional buildings are required for the borough, and that there would appear to be no justification for the erection of any dwellings of less than four rooms.

STANDISH.—The D.C. has decided to carry out the necessary repairs at the Smallpox Hospital.

STOCKTON-ON-TEES.—At a recent meeting of the Stockton R.D.C. plans were passed for 14 huts to be used as temporary workmen's dwellings at Haverton Hill, and it was stated that several hundreds of these will shortly be required.

SUNDERLAND.—The Health Committee is recommending the execution of additions to the Millfield District sewage system at an estimated cost of £1,700.

TATSFIELD.—The P.C. has agreed to suggest to the Rev. B. G. Popham that a fund should be raised for repairing the Parish Hall and its approaches.

WANDSWORTH.—Plans passed by B.C.:—Mr. A. Sykes, erection of sanitary accommodation, 98, Balham High-road; Messrs. E. Ayling & Sons, sanitary accommodation, Putney Embankment; Mr. E. Potterton, erection of four water-closets at the Aluminium Plant and Vessel Company's works, Point Pleasant, Southfield; Messrs. Hudson Bros., sanitary accommodation, 270, Trinity-road, Springfield; Mr. G. Roberts, additions at Messrs. Renault's Garage, Keswick-road, Southfield; Mr. D. Weston, re-drainage, 22, Buckleigh-road, Streatham; Messrs. T. H. Adamson & Sons, re-drainage of 25, Disraeli-road, Putney; Mr. E. C. Gear, re-drainage of 4, Calder's-row, Streatham.

WORCESTER.—The City Council has expressed itself favourable to the establishment of a large factory in or near the city.

Industrial Reconstruction Council.

Following on the success of the inaugural meeting at the Guildhall, a national campaign has been planned by the Industrial Reconstruction Council, and meetings are already arranged under the Lord Provost of Edinburgh, and the Lord Mayors of Manchester, Birmingham, Sheffield, Norwich, and Nottingham. Sir Charles Allom and Mr. Wilfrid Hill, a member of the Whitley Committee, have recently been added to the Executive. The Council's explanatory pamphlet on "Trade Parliaments," which is the fullest explanation yet published of the Whitley Report, has, we understand, run into the third edition. Negotiations are now proceeding for the establishment of local branches of the Council in all the leading industrial centres, and those who are interested in this work, and are prepared to assist, will be welcomed by the Committee. The address of the Secretary is 8, Bouverie-street, E.C. 4.

Competitions, Contracts, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts, iv; Competitions, —; Public Appointments, —; Auction Sales, xx. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

BUILDING AND PAINTING.

MARCH 23.—**Dewsbury.**—REPAIRS.—For Building repairs to Gawthorpe Church of England Infants' Schools. Particulars from Rev G. L. H. Harvey, Gawthorpe Vicarage, Chickenley Heath. Dewsbury.

MARCH 25.—**Hunslet.**—BRICKLAYER'S WORK, &C.—The Guardians invite tenders for small bricklayer's, joiner's, plumber's, and ironmonger's work for three months from the 1st April next. Forms of Mr. Fred W. Mee, Clerk to the Guardians, Union Offices, Glass-street, Hunslet.

NO DATE.—**Waterloo.**—PAINTING.—The Governors of Waterloo-with-Seaforth Secondary School invite tenders for painting the outside of the school. Specifications of the Surveyor to the U.D.C. of Waterloo-with-Seaforth, Town Hall, Waterloo.

ROAD, SANITARY, AND WATER WORKS.

MARCH 25.—**Hunslet.**—HIGHWAY MATERIAL. Supply to the R.D.C. of highway material for the twelve months commencing 1st April, 1918. Specifications from Mr. W. B. Pindar, Clerk to the Council, Leek-street, Hunslet, Leeds.

MARCH 26.—**Barton-upon-Irwell.**—SETTS, KERBS, &C.—Supply to the R.D.C. during the year ending 31st March, 1919, of setts, kerbs, macadam, flags, limestone chippings, sanitary pipes, and road brushes. Form of Mr. A. H. Mountain, surveyor, Council Offices, Patricroft.

FURNITURE, MATERIALS, etc.

★APRIL 4.—**London.**—The Borough of Bermondsey invite tenders for removal of clinker, &c., from neckinger. Forms may be obtained from the Town Clerk Town Hall, Spa-road, S.E. 16.

"KING" JOINTLESS FLOORING
Substitute for FLOORBOARD and LINOLEUM
Made in Various Colours AND Degrees of Hardness
J. A. KING & Co., 181, Queen Victoria St., E.C 4
Telephones: CITY 2218, CENTRAL 773
Telegrams: "KINOVIQUE, CENT. LONDON"

MAW & Co. LIMITED
BENTHALL WORKS, JACKFIELD, SHROPSHIRE.
TILES
PLAIN AND ORNAMENTAL, for WALLS, HEARTHS, FLOORS &c
EMBOSSED, GLAZED, PRINTED, PAINTED, MOSAIC & ENCAUSTIC.
MAJOLICA
MOSAIC & &C.
WHOLESALE AGENTS: MESSRS. W. B. SIMPSON & SONS, 100, ST. MARTIN'S LANE, LONDON, W.C.2

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised—Ed.]

*** Our aim in this list is to give, as far as possible, the *average* prices of materials; not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1,000 Alongside, in River Thames.	£ s. d.
Best Stocks	2 10 0
Picked Stocks for Facings	3 5 0

Per 1000, Delivered at Railway Depot, London.

	£ s. d.		£ s. d.
Flettons	2 3 0	Best Blue Pressed Staffordshire	6 10 0
Best Fareham Red	4 0 0	Do. Bullnose	6 15 0
Best Red Pressed Ruabon Facing	6 0 0	Best Stourbridge Fire bricks	9 5 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	14 17 6	D'ble Str'tch'rs	20 7 6
		D'ble Headers One Side and two Ends	17 7 6
Headers	14 7 6	Two Sides and one End	21 7 6
Quoins, Bullnose and 4½in. Flats	22 17 6	Splays and Squints	18 7 6

Glazed bricks priced at so much each, 25 per cent. advance on list.

Second Quality, £1 per 1,000 less than best.

	s. d.		
Thames Ballast	10 0	per yard,	delivered
Pit Sand	12 6		
Thames Sand	13 6	„ „	2 miles
Best Washed Sand	14 0	„ „	radius
¾in. Shingle for Ferro-Concrete	12 0	„ „	Paddington.

Per ton, delivered.

	£ s. d.		£ s. d.
Best Portland Cement	2 15 0	..	2 18 0

Do. £2 11s. 0d. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 1 13 6 at rly. depot.

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 3d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	2 10½
Do. do. delivered on road waggons at above stations, per ft. cube	2 11½

White basebed, 2d. per ft. cube extra.

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average.*

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.

	s. d.		s. d.
Ancaster in blocks	2 0	Closeburn Red Freestone	2 2
Beer in blocks	1 7½	Red & White Mansfield random block	2 9
Grinshill in blocks	2 4	Yellow Magnesian Limestone do. do	3 3
Darley Dale in blocks	2 5		

YORK STONE—*Robin Hood Quality.*

Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	3 11
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	3 0
6 in. rubbed two sides, ditto ..... „	3 4
3 in. sawn two sides slabs (random sizes) „	1 3½
2 in. to 2½ in. sawn one side slabs (random sizes) „	0 10
1½ in. to 2 in. ditto, ditto „	0 8½

HARD YORK—

Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	3 6
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	2 8
6 in. rubbed two sides ditto ..... „	2 4
3 in. sawn two sides slabs (random sizes) „	1 3
2 in. self-faced random flags ..... „	0 5½

TILES.

Per 1,000 f.o.r. London.	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district	3 15 0
Ditto hand-made ditto	3 17 6
Ornamental ditto	4 0 0
Hip and valley tiles (per dozen)	0 9 0

SLATES.

		Per 1,000 of 1,200 f.o.r. London. £ s. d.
Best Blue Bangor Slates,	20 by 10	16 10 0
	16 by 8	8 10 0
First quality" „	20 by 10	16 0 0
	16 by 8	8 2 6
Best Blue Portmadoc	20 by 10	16 10 0
„ „	16 by 8	8 10 0
First quality „	20 by 10	15 5 0
„ „	16 by 8	7 12 6

WOOD.

BEST BUILDING REDWOOD. Imported sizes.
Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in. .....
3 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in. .....

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn

WOOD (*Continued*).

BEST BUILDING REDWOOD.
Battens: 2 in., 2½ in., and 3 in. by 8 in. .....
2 in., 2½ in., and 3 in. by 7 in. .....
2 in., 2½ in., and 3 in. by 6 in. .....
Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in. ...
3 in. by 4 in., and 3 in. by 4½ in. .....
Boards: 1 in., 1½ in., and 1½ in. by 6 in. and 7 in.
¾ in. .....
Seconds .....
Sawn pitch pine logs (about 35 cu. ft. average .....
Do. 6 in. to 10 in. ..
Best Pitch Pine Deals ....
Under 2 in. thick .....

JOINERS' WOOD

White Sea First Quality Red: 4 in. by 11 in...
3 in. by 11 in., and 2 in. by 11 in. .....
4 in. by 9 in. .....
3 in. by 9 in., and 2½ in. by 9 in. .....
3 in. by 11 in. boards ..
7 in. and 8 in. battens ..
7 in. and 8 in. boards ...
Archangel White Deals—
Best 3 in. by 9 in. and 10 in. and 11 in. .....
Seconds, do. .....
U.S. Battens .....
Prepared Floorings and Matchings. Seconds Swedish Red and equal—
1½ in. by 6½ in. planed and shot .....
1½ in. by 6½ in. planed and matched .....
1 in. by 6½ in. planed and shot .....
1 in. by 6½ in. planed and matched .....
¾ in. by 6½ in. planed, matched, and beaded, or V jointed .....
1 in. by 6½ in. do. .....
Columbian or Oregon Pine, best quality .....
Yellow Pine—First regular sizes .....
Oddments .....
Seconds, regular sizes ..
Oddments .....
Kauri Pine—Planks per ft. cube .....

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn.

Dry Wainscot Oak, per ft. super, as inch	0	2	0	..	0	2 6
¾ in. do. do.	0	1	6	..	0	2 0
Dry Mahogany—Honduras, Tabasco, per ft. super, as inch	0	2	6	..	0	3 0
Cuba. Mahogany	0	2	6	..	0	3 6
Dry Walnut, American, per ft. super, as inch	0	2	0	..	0	3 0
French. "Italian," Walnut	0	3	0	..	0	5 0
Teak, per load (Rangoon or Moulmein)	60	0	0	to	85	0 0
Do. do. (Java)						
American Whitewood planks, per ft. cube	1	4	0	..	1	10 0
Glue, per cwt.	6	0	0	..	6	15 0

METALS.

JOISTS, GIRDERS, &c.

Prices controlled by the Ministry of Munitions.

Rolled Steel Joists, ordinary sections, basis price .....
Plain Compound Girders, ordinary sections .....
Plain Compound Stanchions
Angles, Tees, and Channels, ordinary sections .....
Flitch Plates .....
Cast Iron Columns and Stanchions, plain ordinary patterns .....

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	36½	40	41½	42½
Water	31½	37½	36½	40
Steam	26½	35	31½	37½
Galvanised Gas	13½	32½	17½	35
„ Water	5	30	8½	32½
„ Steam	1½ *on*	27	2½	30

L.C.C. SOIL PIPES— London Prices ex works.

	Pipes coated. s. d.		Bends, stock angles. s. d.		Branches, stock angles s. d.	
2 in. per yd. in 6 fts.	3	2 ..	2	4½ ..	2	10½
2½ in. „ „	3	8 ..	2	7½ ..	3	7
3 in. „ „	4	6 ..	2	10½ ..	4	3½
3½ in. „ „	5	0 ..	3	7 ..	5	0
4 in. „ „	5	6 ..	4	1 ..	5	9½

RAIN-WATER PIPES, &c.

	Pipe. s. d.		Bends, stock angles. s. d.		Branches, stock angles s. d.	
2 in. per yd. in 6fts. plain	2	3½ ..	1	4 ..	1	9
2½ in. „ „	2	5 ..	1	7 ..	2	2
3 in. „ „	2	10½ ..	1	11 ..	2	10
3½ in. „ „	3	5½ ..	2	3 ..	3	3
4 in. „ „	3	9½ ..	2	9 ..	4	0

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 6s. 3d. .. 5 in., 7s. 9d. .. 6 in., 9s. 2d.

Per ton in London.

	£ s. d.		£ s. d.
IRON— Common Bars	16 10 0	to	17 0 0
Staffordshire Crown Bars — good merchant quality	16 10 0	..	17 10 0
Staffordshire "Marked Bars"	17 10 0	..	18 0 0
Mild Steel Bars	19 0 0	..	19 10 0

METALS (*Continued*).

Per ton in London.

	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, £19 basis price.			
Hoop Iron, basis price	20 10 0	..	21 0 0
„ „ Galvanised	33 0 0	..	—
(* And upwards, according to size and gauge.)			
Sheet Iron Black—			
Ordinary sizes to 20 g.	22 10 0	..	23 0 0
„ „ 24 g.	23 10 0	..	24 0 0
„ „ 26 g.	24 10 0	..	25 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	34 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	34 0 0	..	34 10 0
Ordinary sizes to 26 g.	36 0 0	..	36 10 0
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	35 10 0	..	—
„ „ 22 g. and 24 g.	36 0 0	..	—
Ordinary sizes to 26 g.	39 0 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	33 0 0	..	—
Ordinary sizes, 22 g. and 24 g.	33 10 0	..	—
Ordinary sizes, 26 g.	32 10 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	24 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.	24 15 0	..	—
Best Soft Steel Sheets, 26 g.	26 10 0	..	—
Cut Nails, 3 in. to 6 in.	28 0 0	..	29 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

Delivered in London.

	£ s. d.		
LEAD—Sheet, English, 4 lb. and up	38 10 0	..	—
Pipe in coils	39 0 0	..	—
Soil Pipe	42 0 0	..	—
Compo pipe	42 0 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra. Orders for over 1 cwt. Sheet Lead or Pipe, or 28 lbs. Solder should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N.2 (E)], Hotel Victoria, S.W. Smaller quantities than the above can be obtained by making a written declaration to the Manufacturer or Merchant that the metal is wanted for urgent renewals or repairs, and giving the name of the job for which it is required.

		£ s. d.		
COPPER— Strong Sheet ....per lb.		0 2 2	..	—
Thin „	„	0 2 3	..	—
Copper nails	„	0 2 2	..	—
Copper wire	„	0 2 3	..	—
TIN—English Ingots	„	0 3 3	..	—
SOLDER—Plumbers'	„	0 1 5	..	—
Tinmen's	„	0 1 10	..	—
Blowpipe	„	0 2 0	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft		Per Ft.
15 oz. fourths	7d	32 oz. fourths	9d.
„ thirds	7½d.	„ thirds	10d.
21 „ fourths	7½d	Fluted, Obscured and	
„ thirds	8d.	Enamelled Sheet.	
26 „ fourths	8d.	15 oz.	7½d.
„ thirds	9d.	21 „	8½d.

Extra price according to size and substance for squares cut from stock, and only small quantities can be supplied without an A Certificate.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
⅜ Rough rolled and rough cast plate	5½d.
½ Rough rolled and rough cast plate	5½d
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	7½d.
Rolled Sheet	5d.
White Rolled Cathedral	5d.
Tinted do.	5½d.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil in pipes per gallon	0 5 6
„ „ „ in barrels „	0 5 7
„ „ „ in drums „	0 5 10
Boiled „ „ in barrels „	0 5 10
„ „ „ in drums „	0 6 1

Orders for these oils must be accompanied by a certificate from the Ministry of Food (Oil and Fat Department), St. Stephen's House, Westminster, S.W.1.

Turpentine in barrels	„	0 10 6
„ in drums	„	0 10 9
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		53 10 0

GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots.. per ton delivered 71 10 0
Red Lead, Dry (packages extra) .. per ton 42 0 0
Orders for White and Red Lead and any Paint containing Lead must be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E.)], Hotel Victoria, S.W.

Best Linseed Oil Putty	per cwt.	0 16 0
Filocol	per cwt.	0 13 6

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak	0 12 0
Pale Copal Oak	0 14 0
Superfine Pale Elastic Oak	0 16 0
Fine Extra Hard Church Oak	0 14 0
Superfine Hard-drying Oak, for seats of Churches	0 16 0
Fine Elastic Carriage	0 16 0
Superfine Pale Elastic Carriage	0 18 0
Fine Pale Maple	0 14 0
Finest Pale Durable Copal	1 0 6
Extra Pale French Oil	1 4 0
Eggshell Flatting	1 0 0
White Pale Enamel	1 6 0
Extra Pale Paper	0 14 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	1 10 0
French and Brush Polish	0 16 0

NEW COMPANIES.

The particulars quoted below have been compiled by Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C. 2, from the documents available at the Companies Registry.

EAGLES CLIFFE BRICKS, LTD. (149,690). Registered February 22. To carry on the business of brickmakers, &c. Nominal capital, £10,000 in £1 shares.

F. M. & H. NUTTALL, LTD. (149,692). Registered February 22. To carry on the business of builders and contractors, &c. Nominal capital, £10,000 in 2,000 £5 shares.

DODDS, FAWCETT, LTD. (149,660). Registered February 20. To carry on the business of a builder and contractor. Nominal capital, £300 in £1 shares.

J. POYNTER & Co., LTD. (149,647). Registered February 18. To carry on the business of builders and contractors, &c. Nominal capital, £3,000 in £1 shares.

WILLIAM T. NICHOLLS, LTD. (149,651). Registered February 18. To carry on the business of builders and contractors, &c. Nominal capital, £20,000 in £1 shares, of which 10,000 are preference shares and 10,000 are ordinary shares.

PATENTS.

APPLICATIONS PUBLISHED.*

112,872.—Alexander William Stewart: System of ventilation.

112,873.—Alfred Leonard Newell: Scales, rules, and like measures of length.

112,888.—Charles Ernest Saunders: Quick acting vices.

112,894.—Lancelot William Wild and Eric Philip Barfield: Method of and means for indicating the condition of steel, iron, or other magnetisable metal during heat treatment.

112,898.—Herbert Kempton Dyson: Concrete and like roofs.

112,906.—Edwin Miles Knolles: Clinometers or angle-testing devices.

112,914.—George Edward Merredew: Glass-sheet retaining clips for use in puttyless glazing systems.

112,971.—Winifred Williams: Device for cleaning and polishing floors and other surfaces.

112,982.—William Nelson Haden and Charges Ingham Haden: Heating buildings.

112,987.—J. Stone & Co., Ltd. (Melville Walton): Apparatus for humidifying air currents.

113,009.—Ben Cromwell: Buildings formed of concrete slabs or blocks.

113,014.—Clemente Pradal: Permutation locks.

113,021.—Charles Laurence Burdick: Painting machine.

113,039.—William Buck and Charles Buck: Construction of concrete walls.

113,055. — Thorvald Nagelstad-Garson: Cranes.

113,056.—William Charles Quiggin: Locks.

* All these Applications are now in the stage in which opposition to the grant of Patents upon them may be made.

TENDERS.

GOOD FRIDAY WEEK.—In consequence of the Easter holidays, we go to press a day earlier than usual next week, *The Builder* being published on Thursday. All communications must reach the Editor by *first post on Tuesday morning.*

* Denotes *accepted.* † Denotes *provisionally accepted.* ‡ Denotes *recommended for acceptance.*

LONDON.—For supply of weighbridge to the Kensington Borough Council:—
*Pooley & Son, Ltd. £452

LONDON.—For supply of materials, &c., to the Kensington Borough Council:—
*S. Pontifex & Co.—Street lanterns, lamp fittings, &c., for twelve months.
*Fredk. Bird & Co.—Iron goods, &c., for twelve months.
*Sankey & Co.—Lime, cement and bricks, for three months.

LONDON.—For installation of 1¼ in. water service pipe at caretaker's lodge at cemetery for the Westminster City Council:—

*Myring & Son, Ealing	£48	15	0
A. Jamieson & Son, Hanwell ..	47	7	6
E. H. Brooks, Hanwell	56	0	0

LONDON.—For the supply of materials to the Wandsworth Borough Council:—
Artificial stone: Croft adamant, Croft Granite Brick and Concrete Co., Ltd.; Victoria Indurated, Patent Victoria Stone Co., Ltd.; Hard York Nonslip, Hard York Nonslip Stone Co.
Ballast and sand: Washed pit sand, Hall & Co., Croydon, Ltd.
Blue paving bricks—J. Knowles & Co. (London), Ltd.
Broken granite—J. Mowlem & Co., Ltd.
Cement—Dawson & Co., Ltd.
Castings—J. Gibb & Co., Ltd.
Granite kerb and setts: Cornish, W. Griffiths & Co., Ltd.
Gravel and flints: Alongside wharves, J. Horsford & Co., Ltd.; Clapham Wards, J. J. Pearson & Co.
Iron bars—J. Gibb & Co., Ltd.
Lime, bricks, &c.: Lime, A. H. Lavers & Co.; firebricks, fireclay, stock bricks, Hall & Co., Croydon, Ltd.; sewer bricks, Dawson & Co., Ltd.
Salt-glazedware pipes, &c.—Doulton & Co., Ltd.
Refined tar—J. Smart & Son.
Steam rollers and scarifying—A. Cheeseman.
Scavengers' brooms—R. J. Clarke & Co.
Tarspraying—Taroads Syndicate, Ltd.
Tools—J. Gibb & Co., Ltd.
Tarpaving Works—Constable, Hart & Co., Ltd.
Tarpaving materials: Alongside wharves, and at roads or depots, Chittenden & Simmons, Ltd.; at railway stations, J. Smart & Son.

TO CORRESPONDENTS.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to THE BUILDER, LTD., and *not* to the Editor.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

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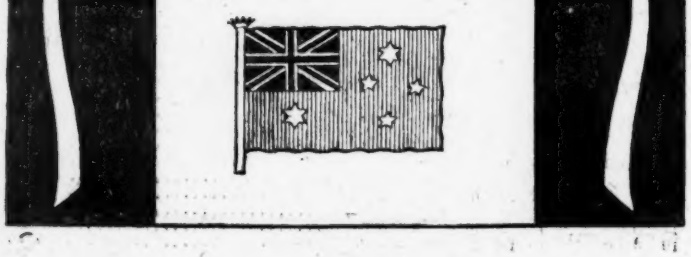

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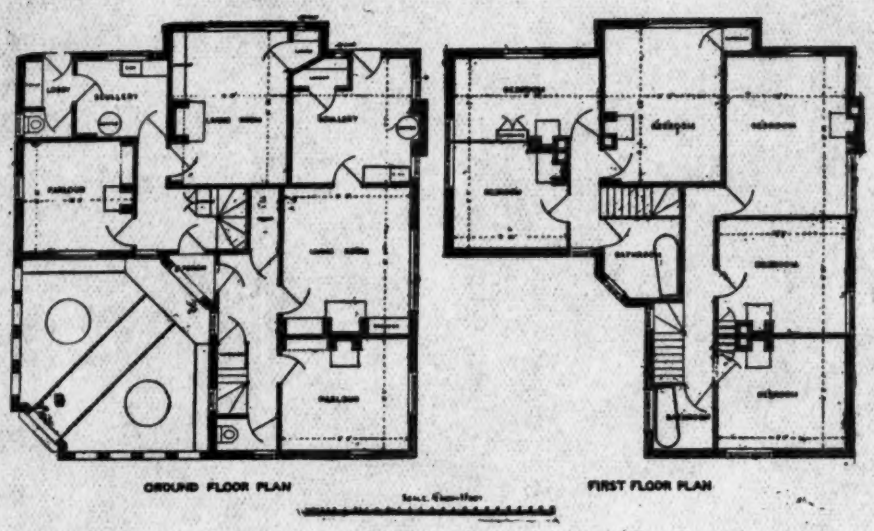

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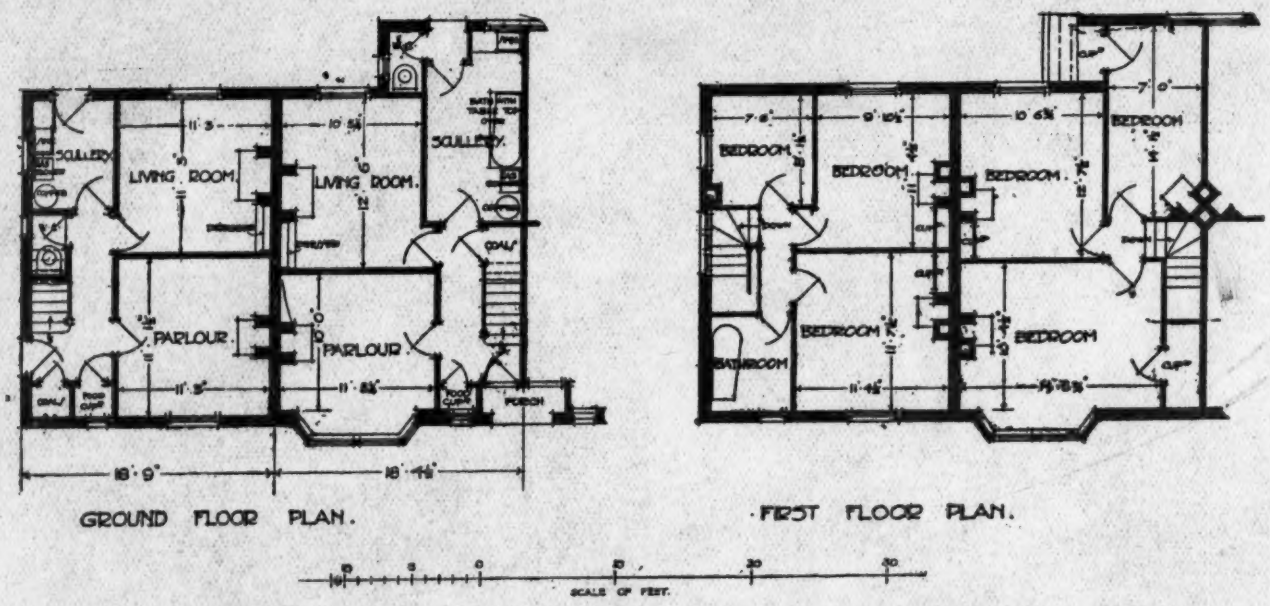

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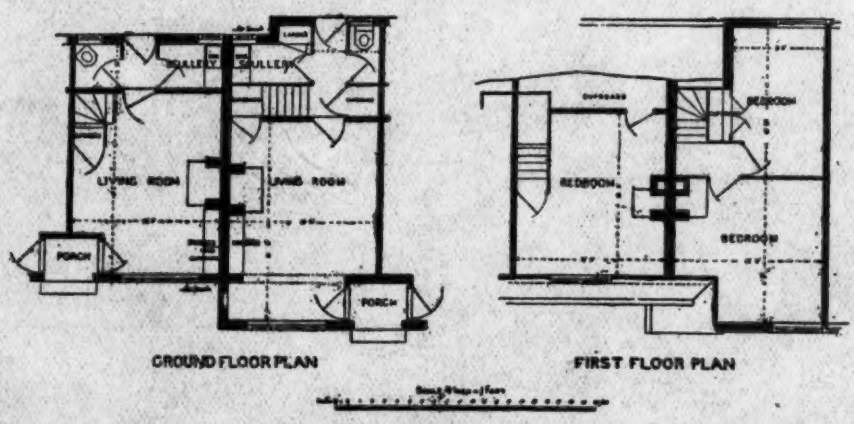

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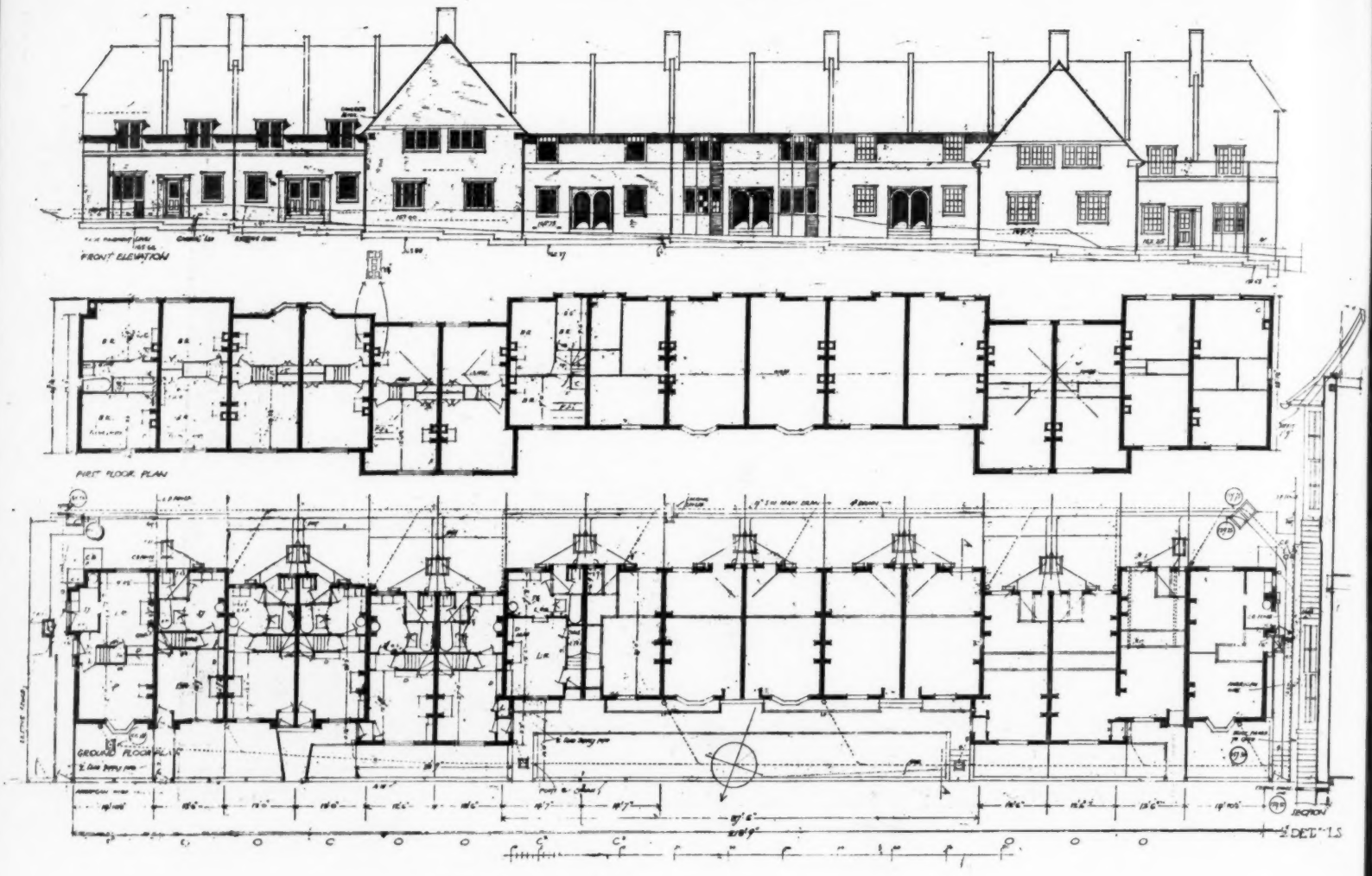

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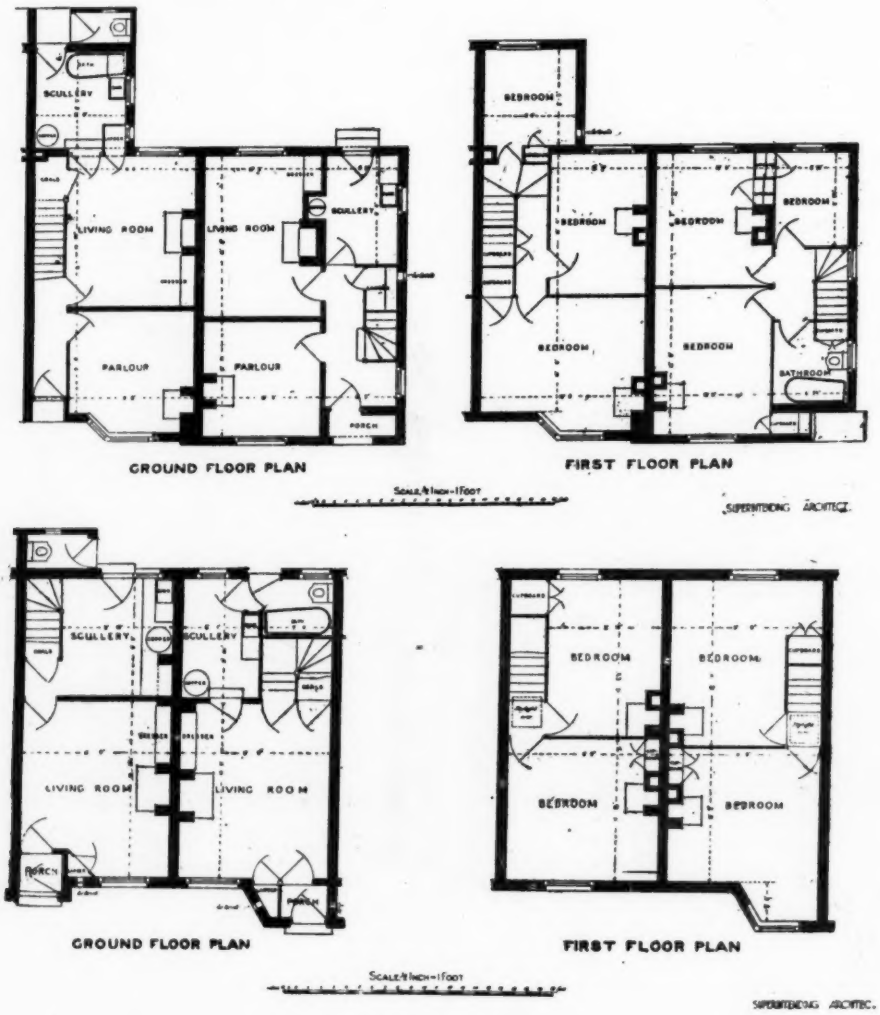

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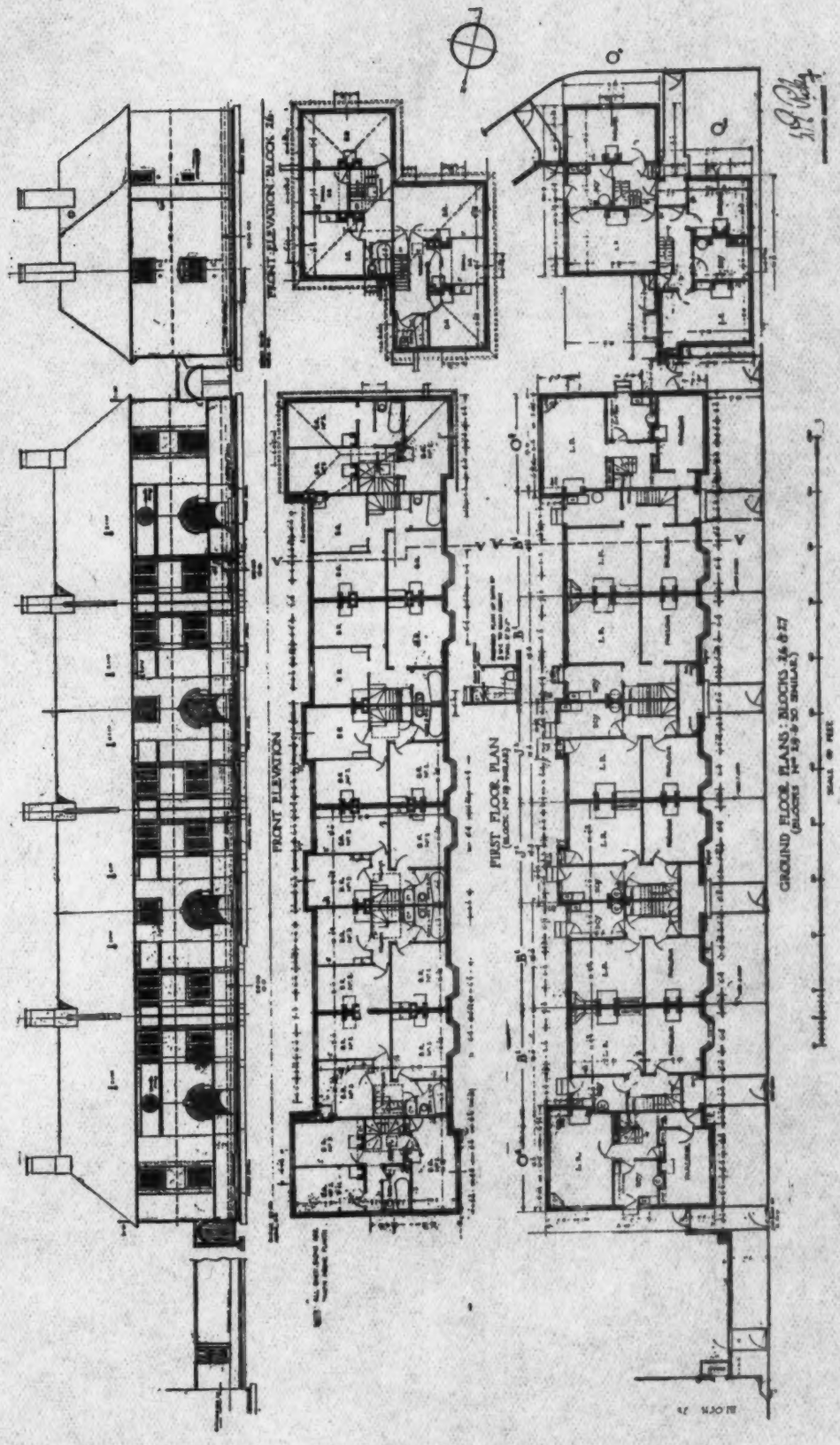
FRONT ELEVATION
FRONT ELEVATION BLOCK 2a
FIRST FLOOR PLAN
GROUND FLOOR PLANS: BLOCKS 2a & 2b (BLOCKS Nos 19 & 20 SIMILAR)
BLOCK 2a

L.C.C. OLD OAK ESTATE.

Mr. W. E. Riley, F.R.I.B.A., Superintending Architect, L.C.C.